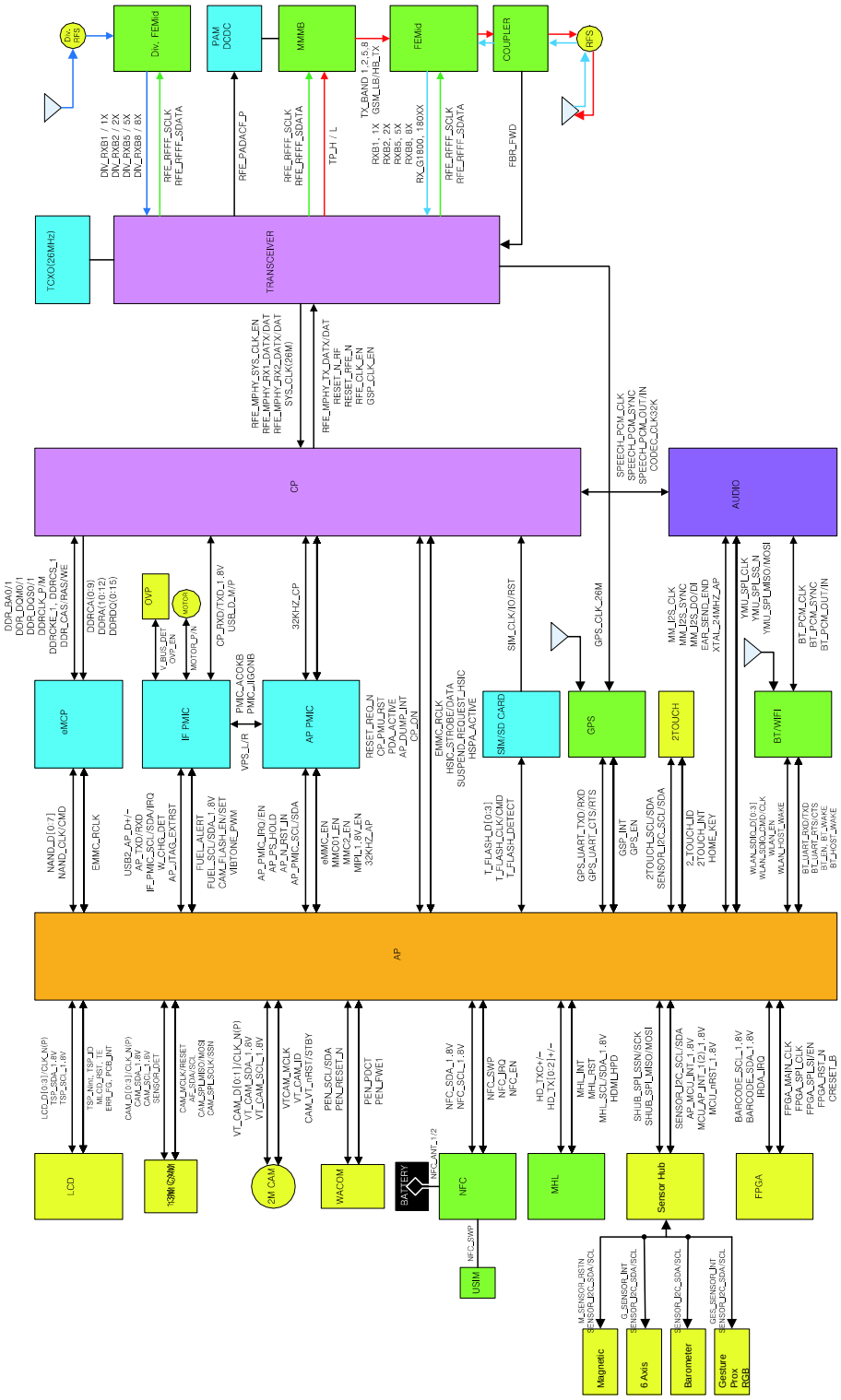
8. Level 3 Repair

8-1. Block Diagram



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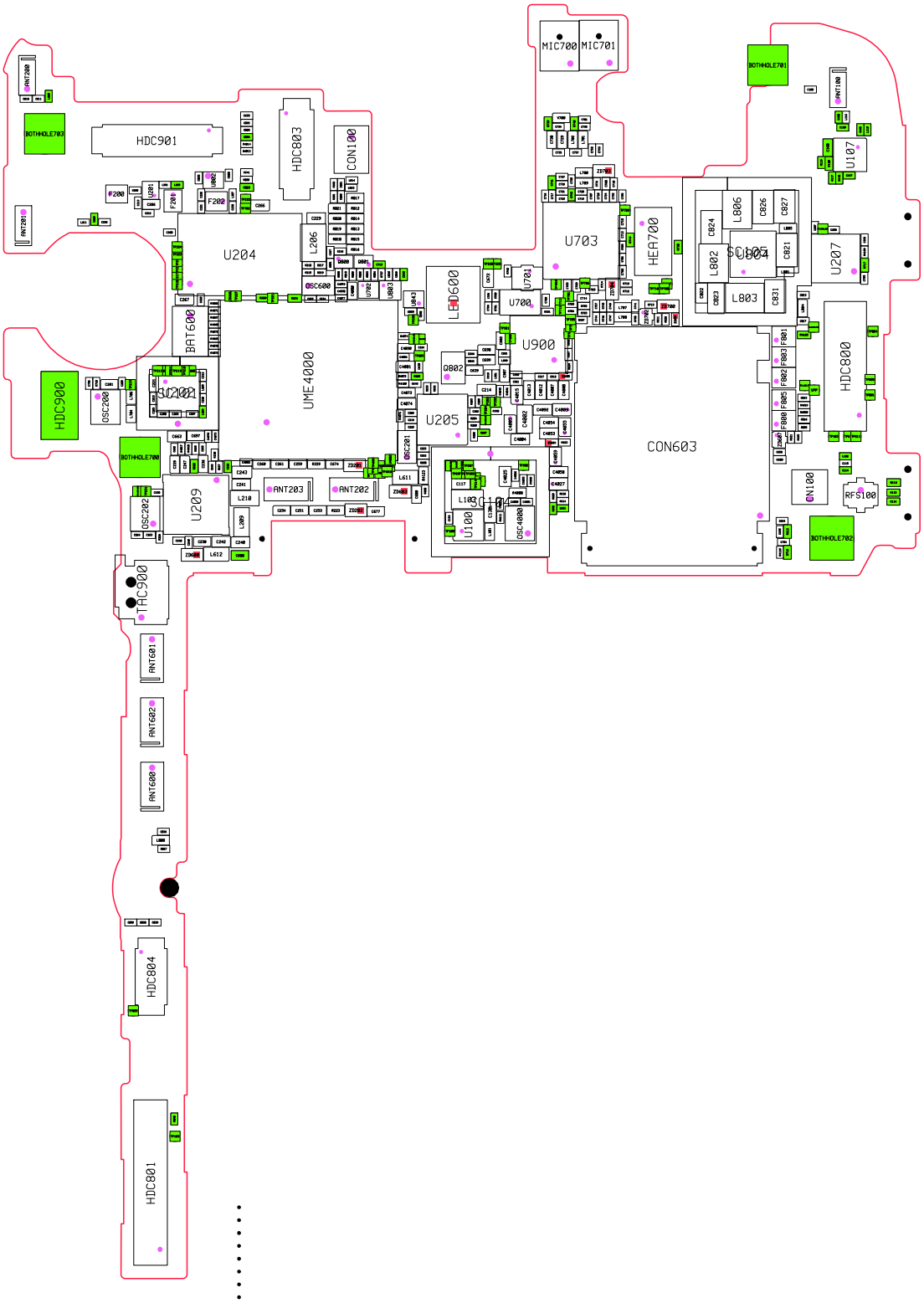
8-2. PCB Diagrams

8-2-1. Main PCB Top



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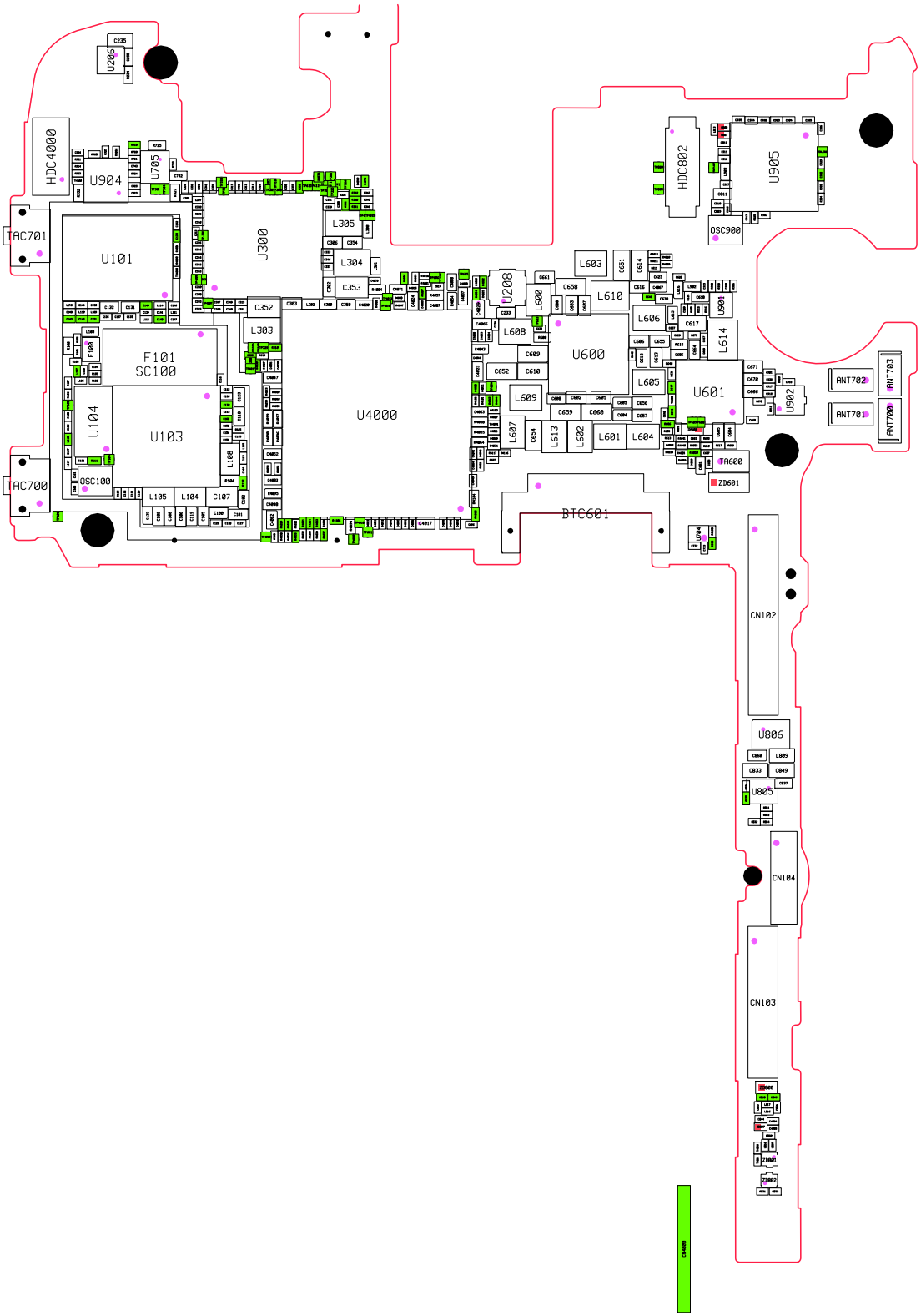
8-2-2. Bottom



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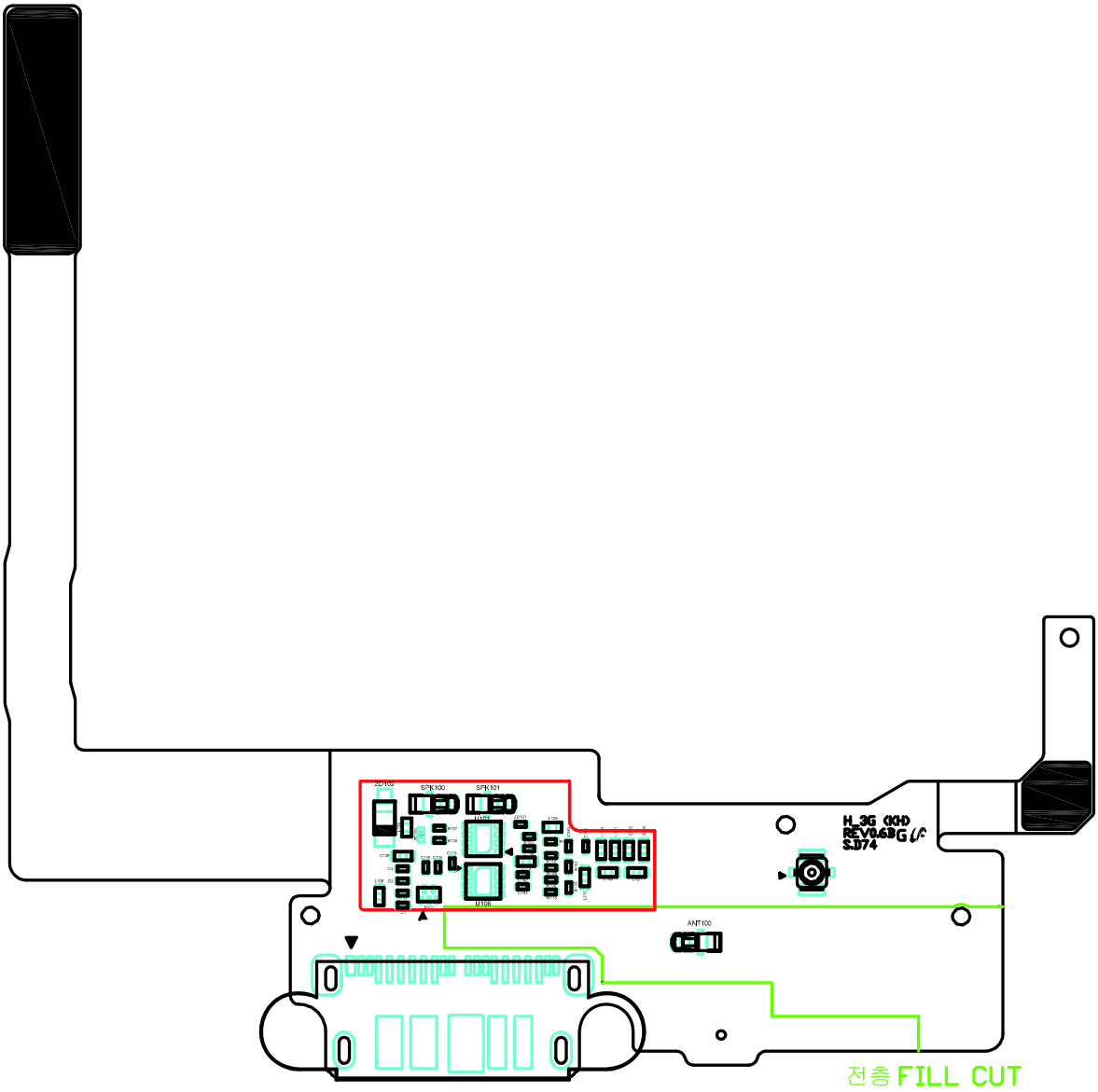
8-2-3. Sub PCB Top



TOP

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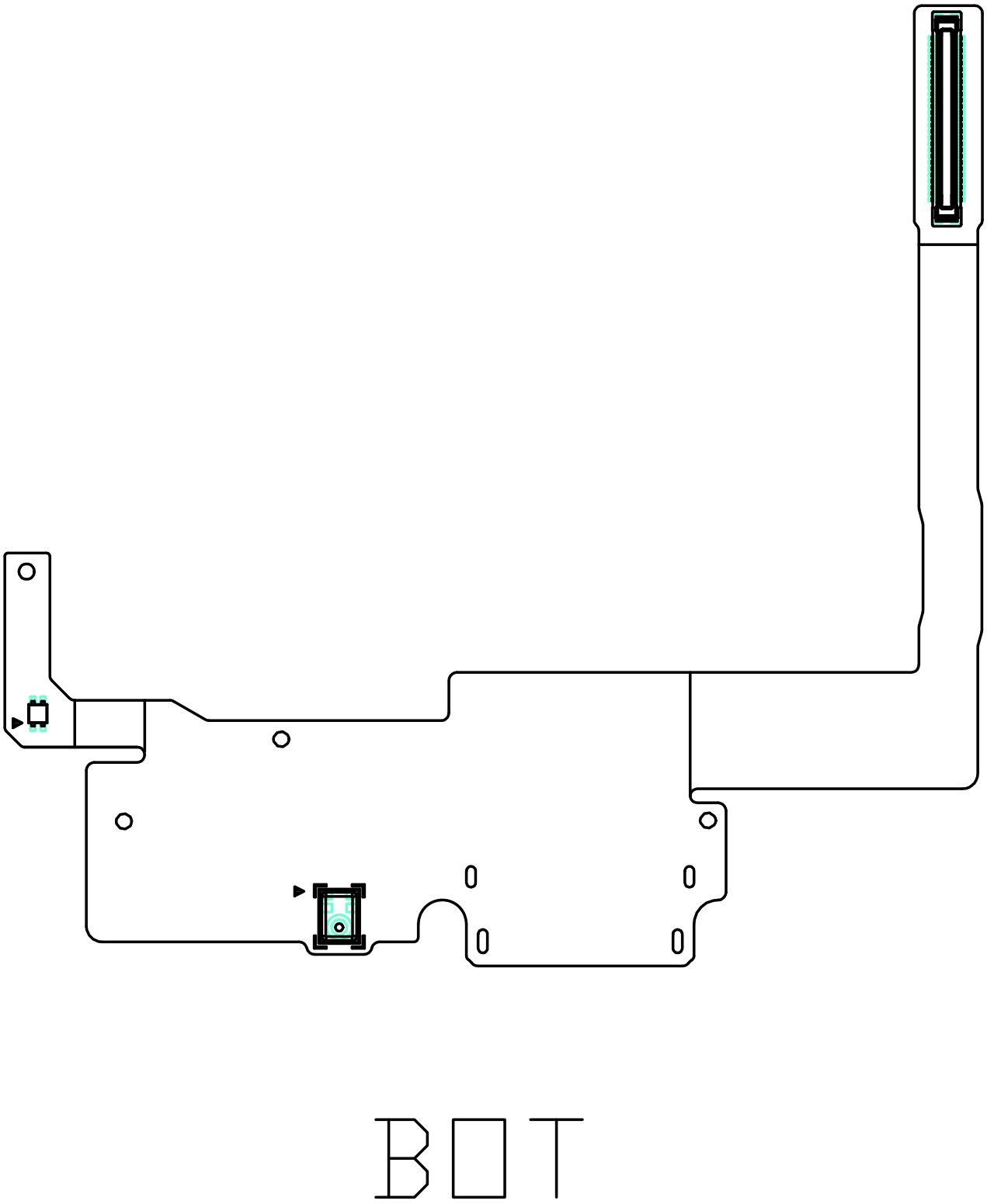
8-2-4. Sub PCB Bottom



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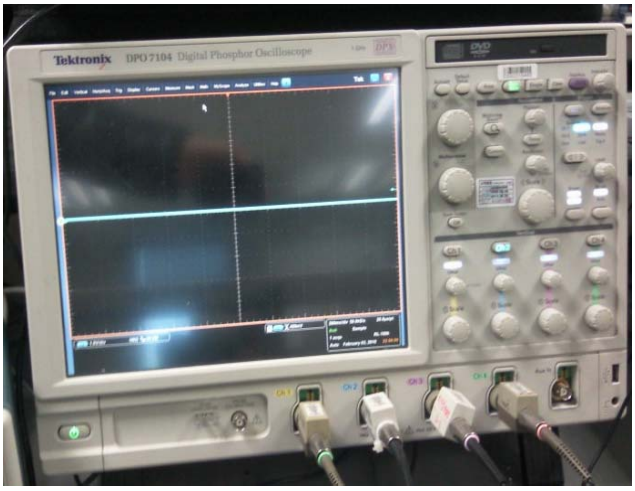
8-3. Flow Chart of Troubleshooting

Equipments

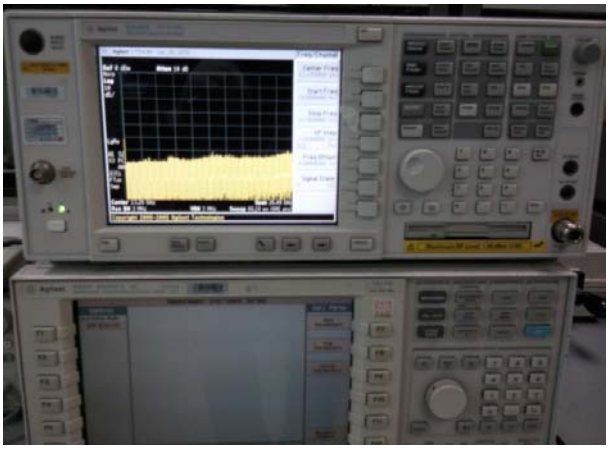


↑ Oscilloscope

↑ Digital Multimeter

↑ Power Supply

↑ + driver, ESD Safe Tweezer



↑ 8960 & Spectrum Analyzer

↑ Soldering iron

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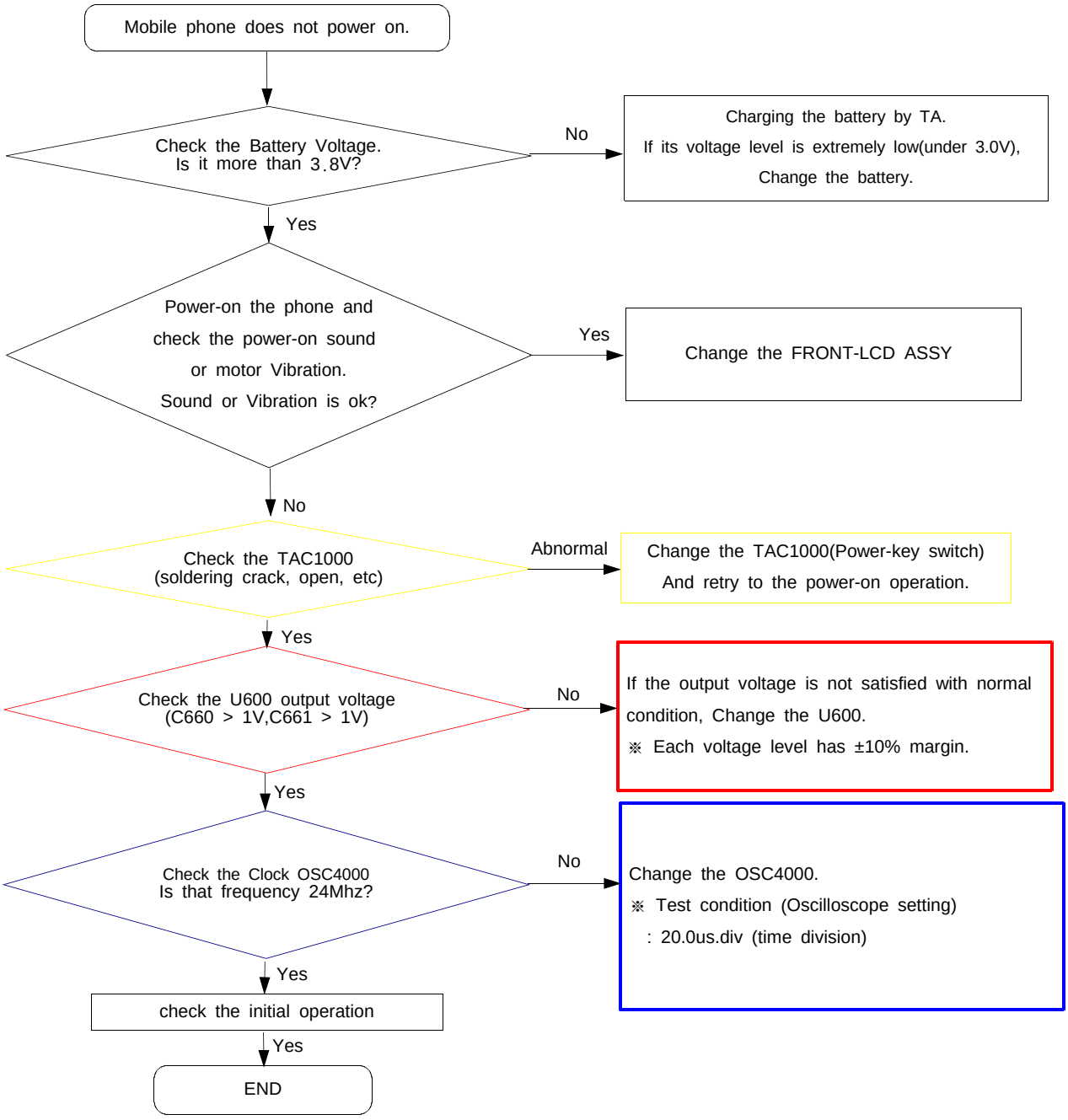
8-3-1. Power On



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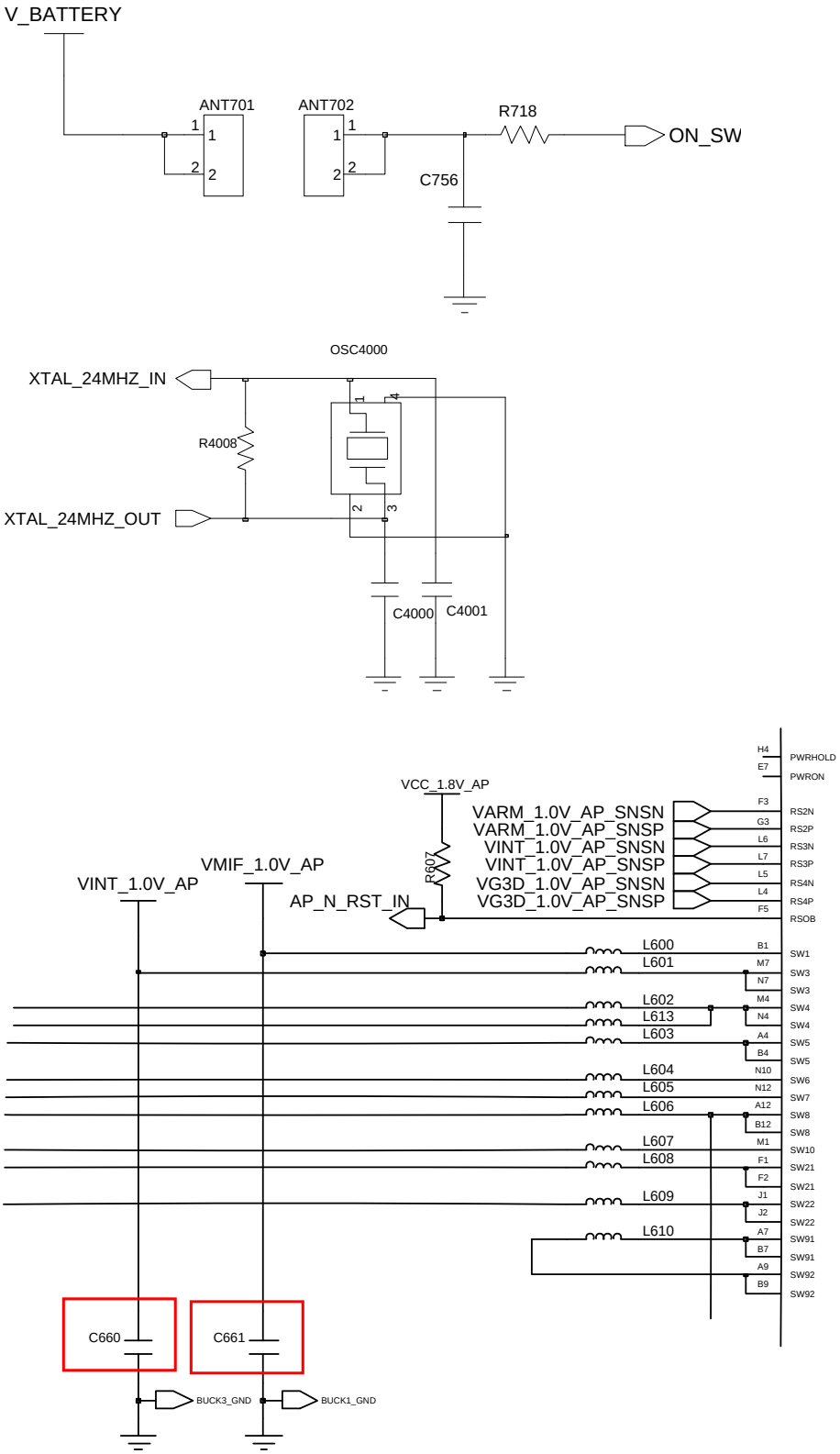

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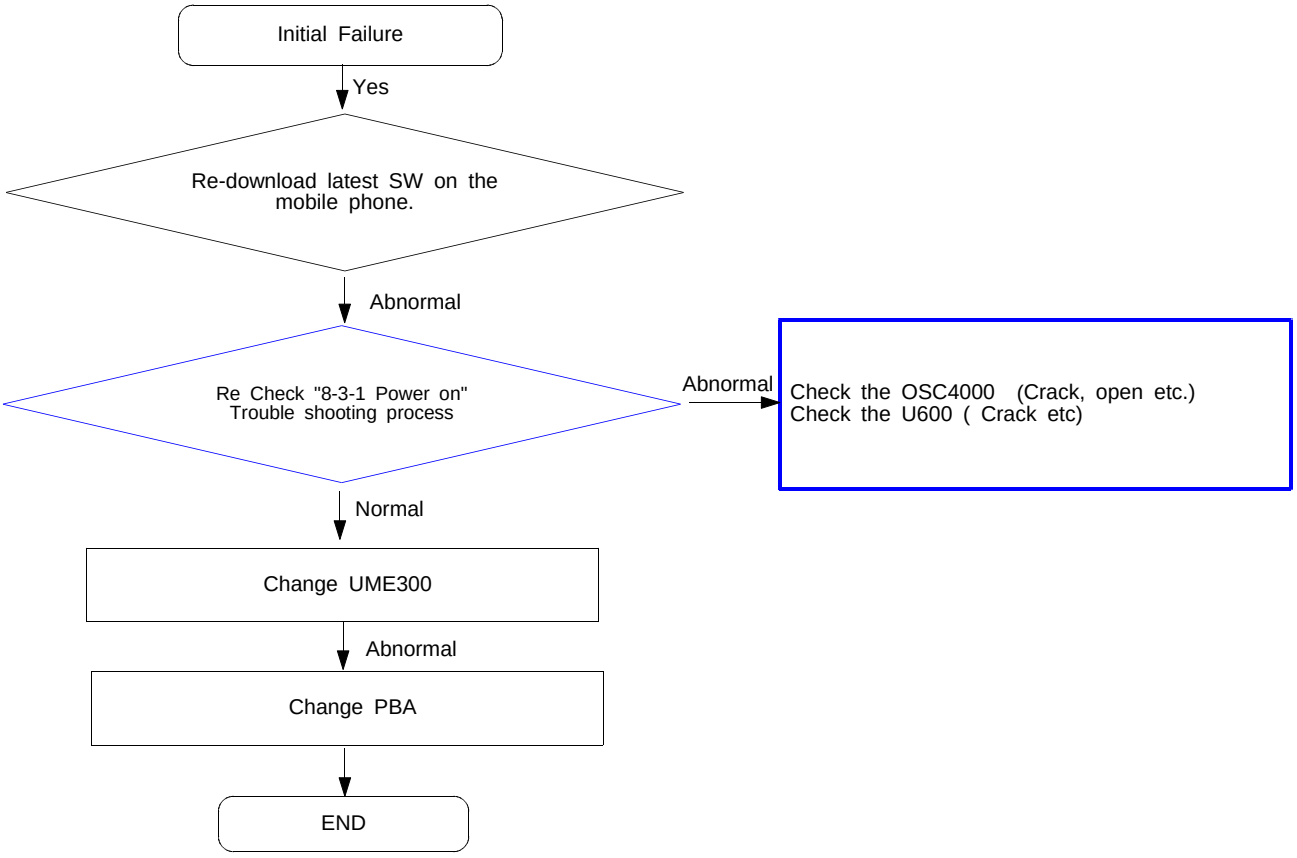
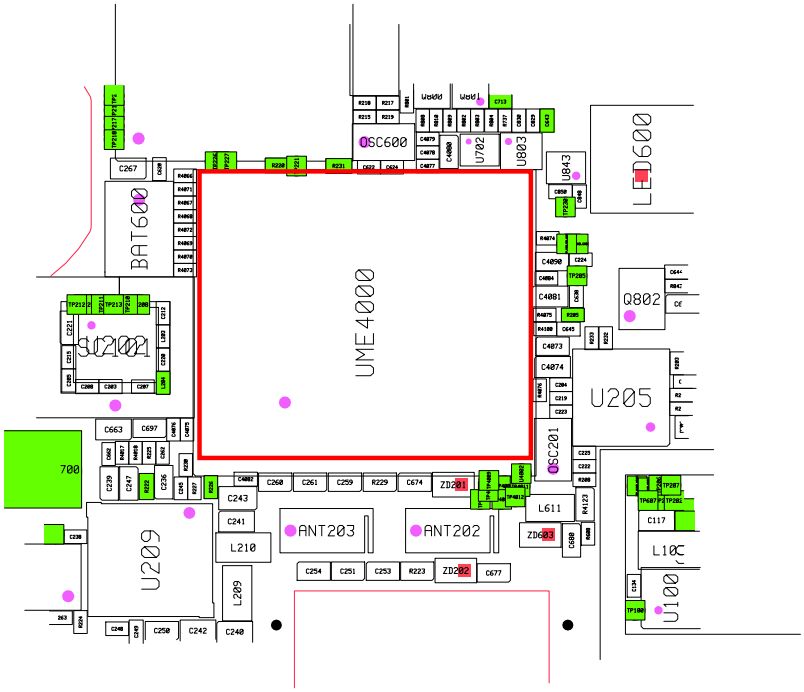
8-3-2. Initial





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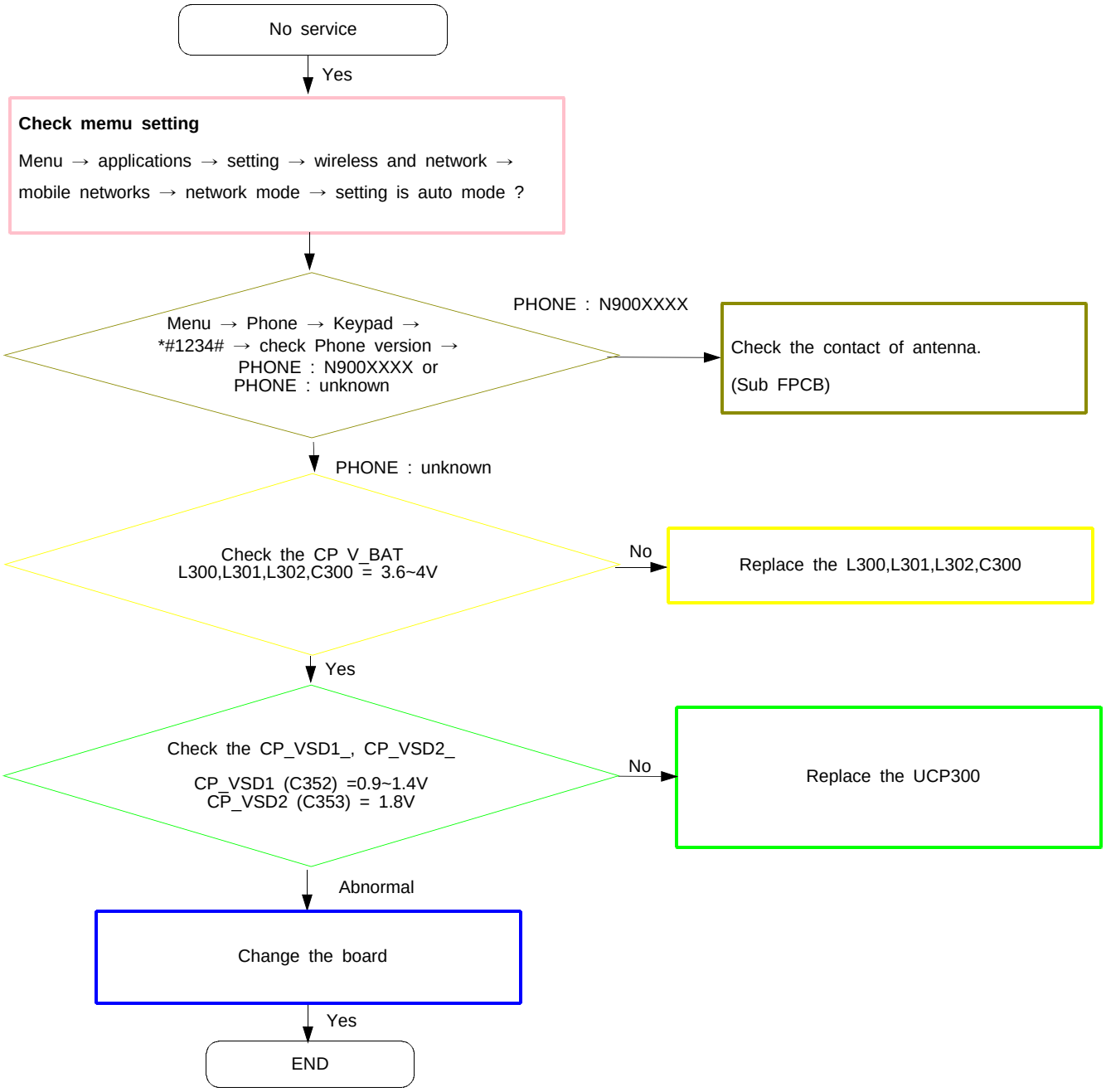
8-3-3. No Service


No service
Yes
Check memu setting
Menu → applications → setting → wireless and network → mobile networks → network mode → setting is auto mode ?
Menu → Phone → Keypad → *#1234# → check Phone version → PHONE : N900XXXX or PHONE : unknown
PHONE : N900XXXX
Check the contact of antenna.
(Sub FPCB)
PHONE : unknown
Check the CP V_BAT L300,L301,L302,C300 = 3.6~4V
No
Replace the L300,L301,L302,C300
Yes
Check the CP_VSD1_, CP_VSD2_
CP_VSD1 (C352) =0.9~1.4V
CP_VSD2 (C353) = 1.8V
No
Replace the UCP300
Abnormal
Change the board
Yes
END

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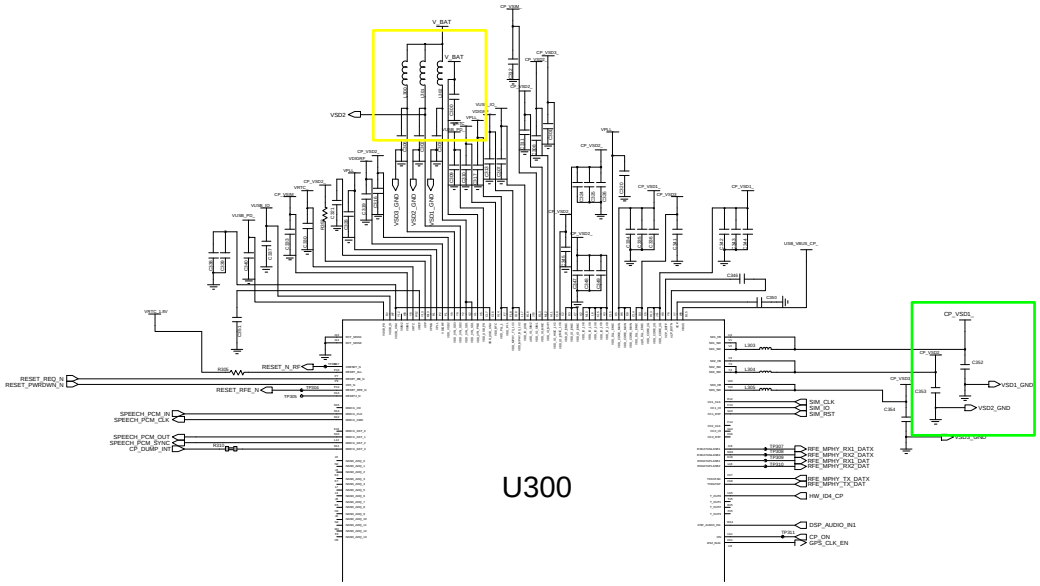

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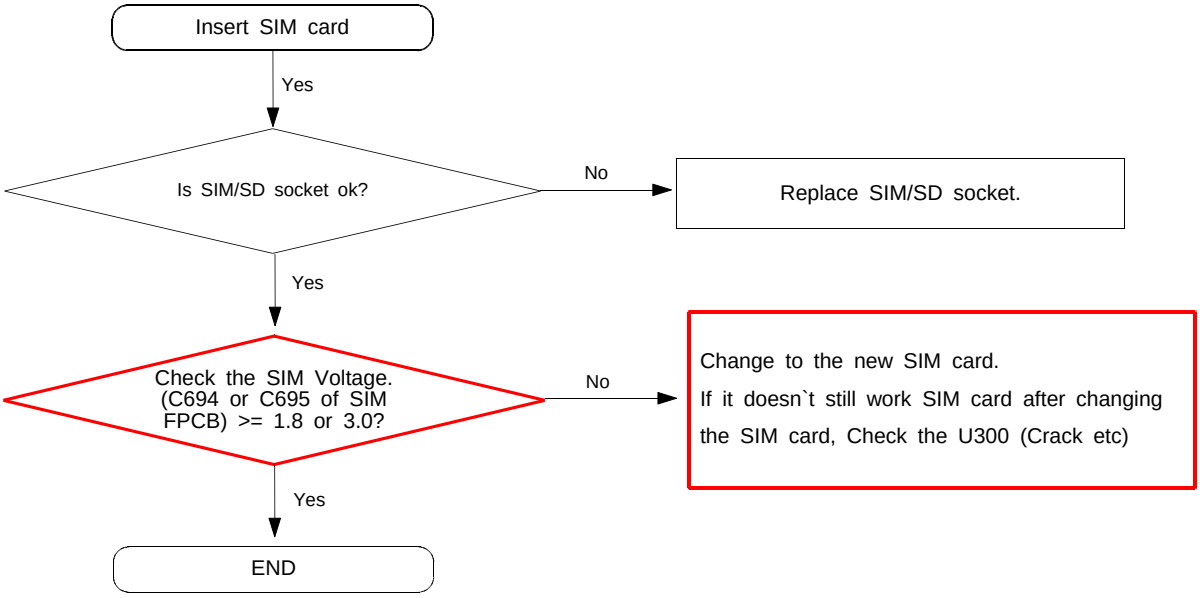
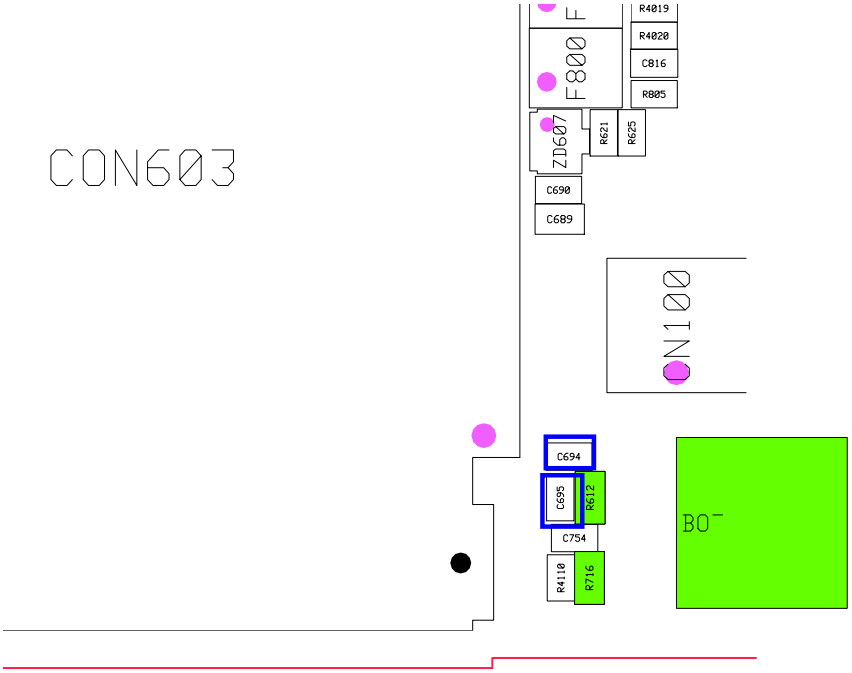
8-3-4. Sim Part





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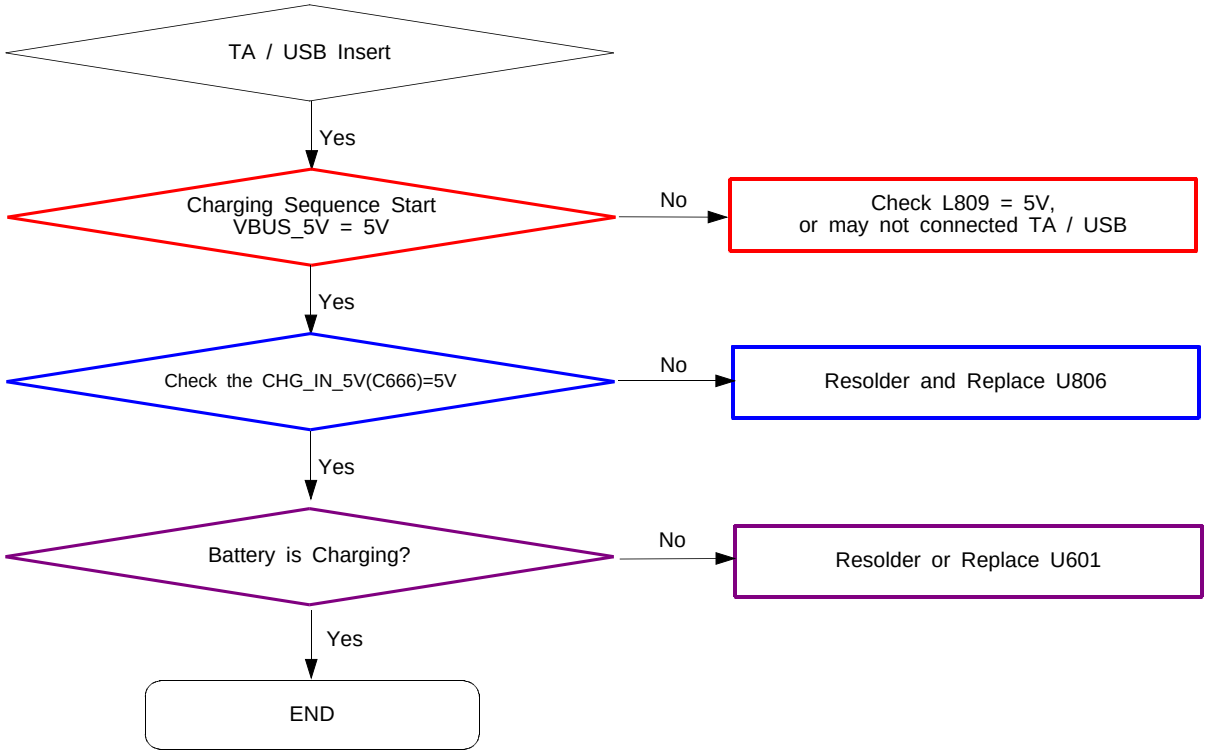
8-3-5. Charging Part



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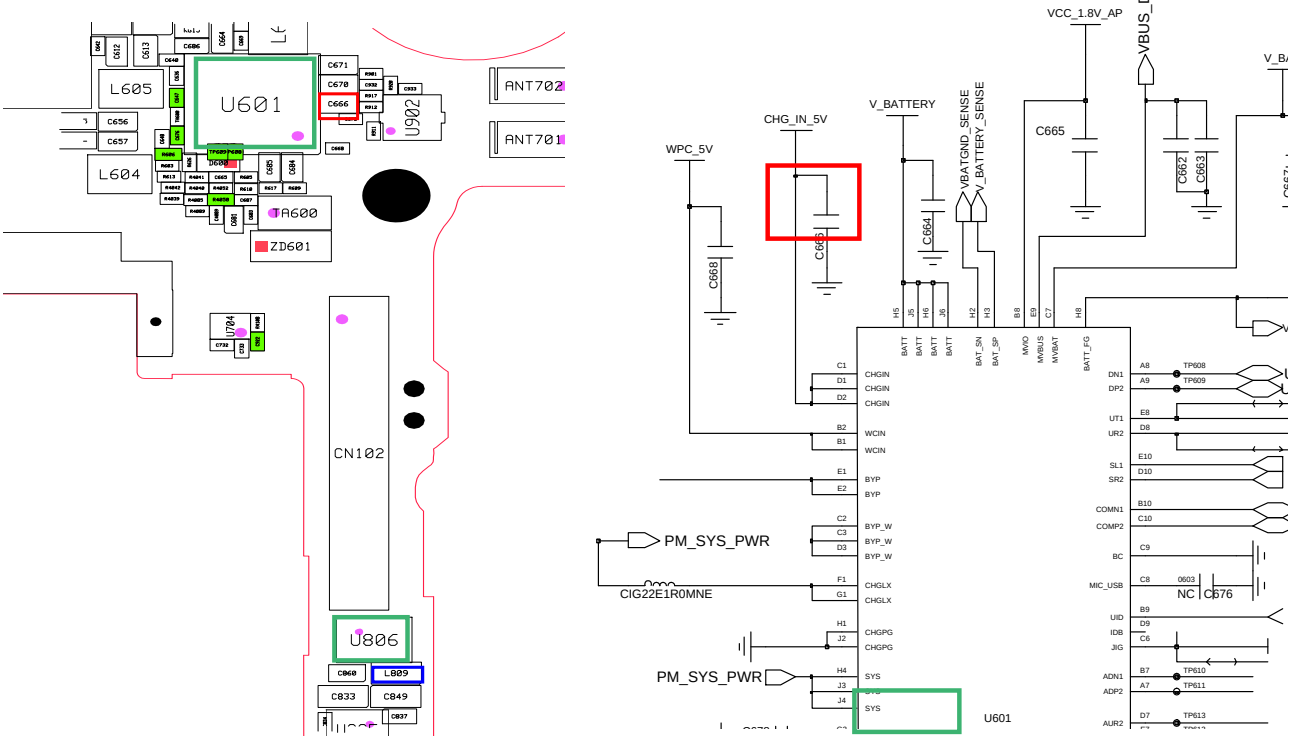

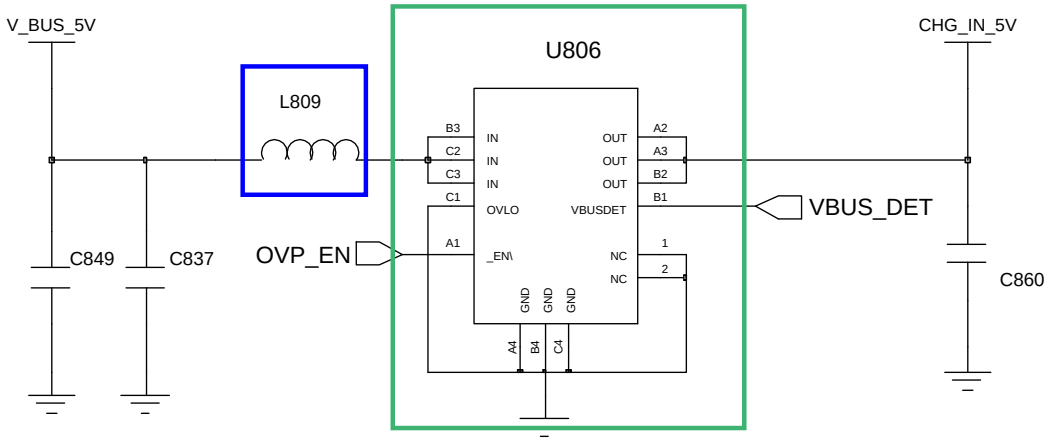

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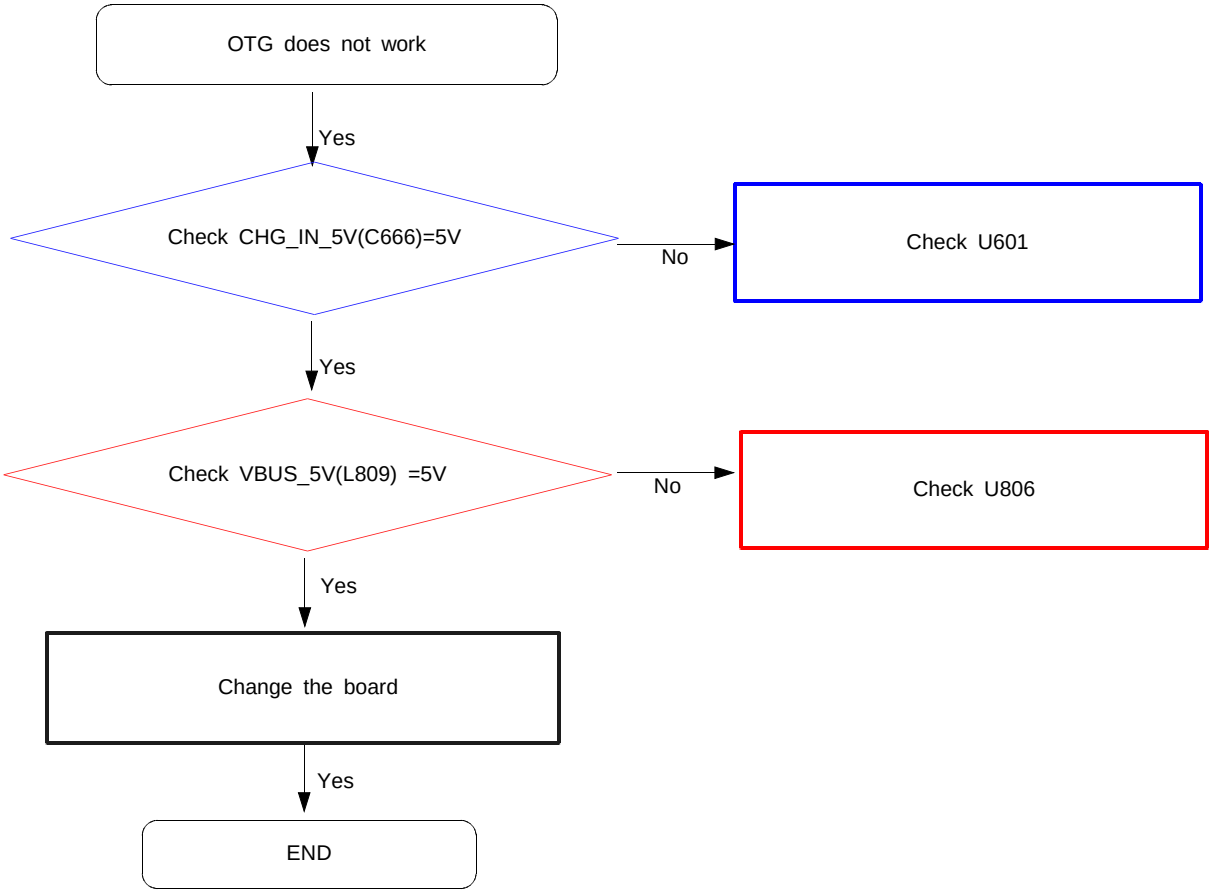
8-3-6. OTG



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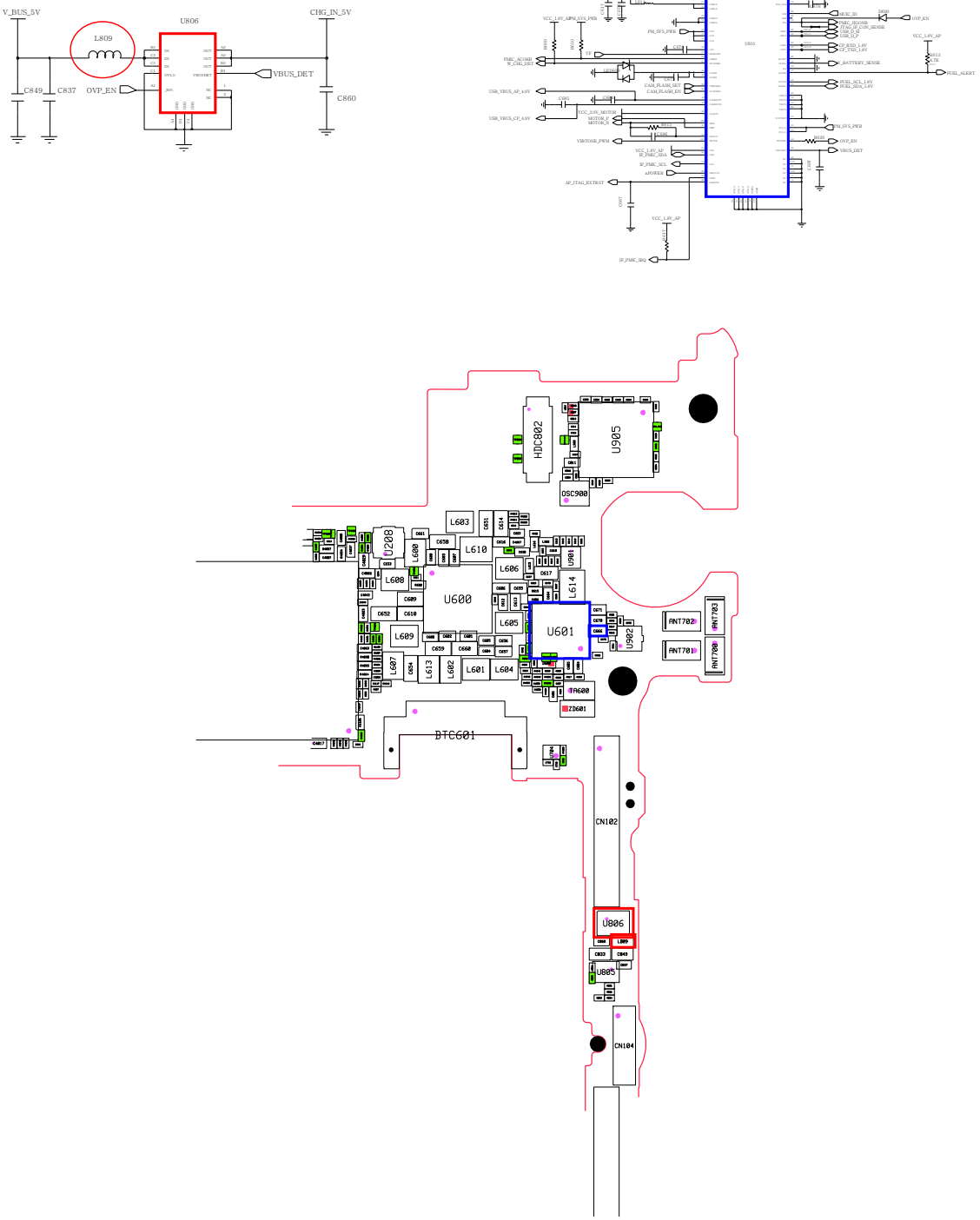

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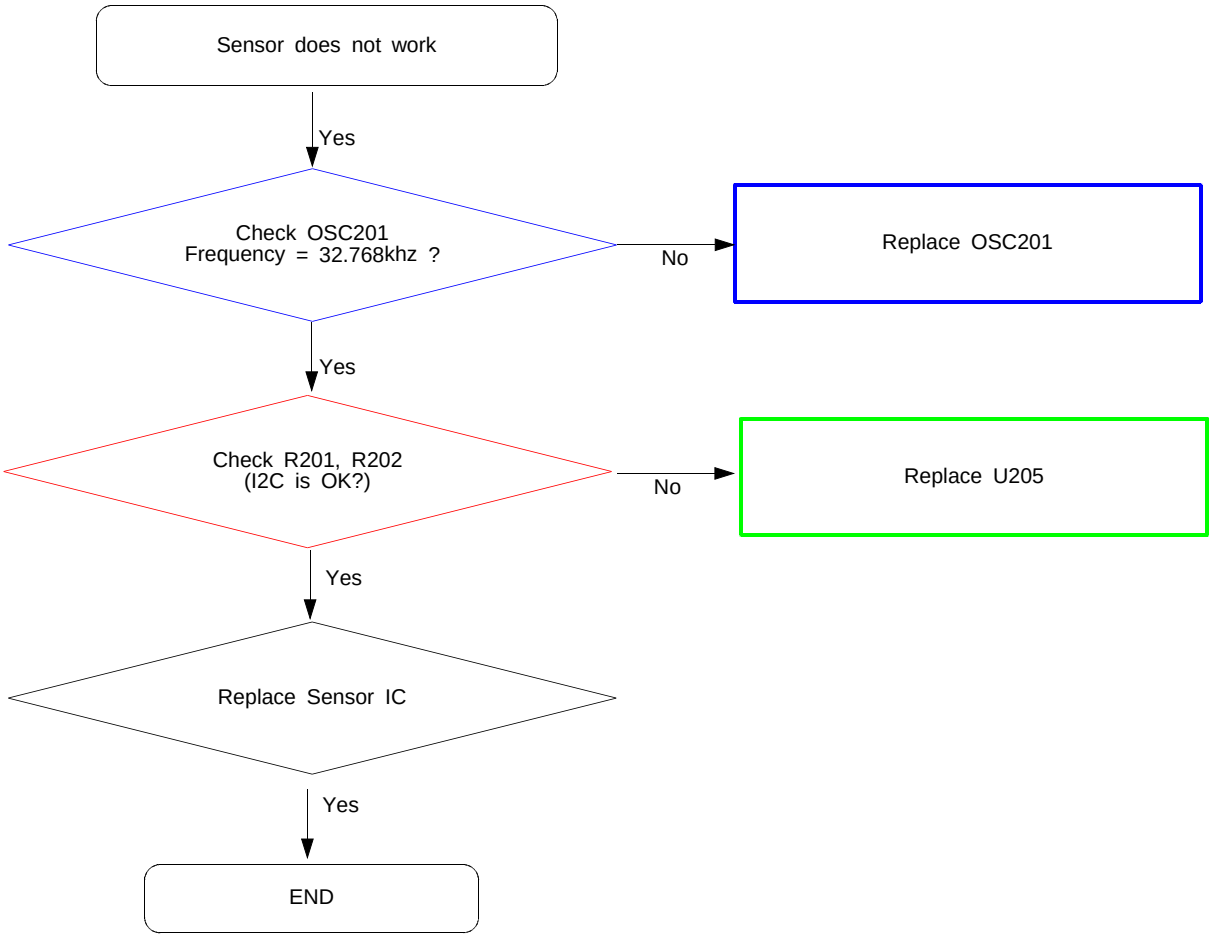
8-3-7. Sensor



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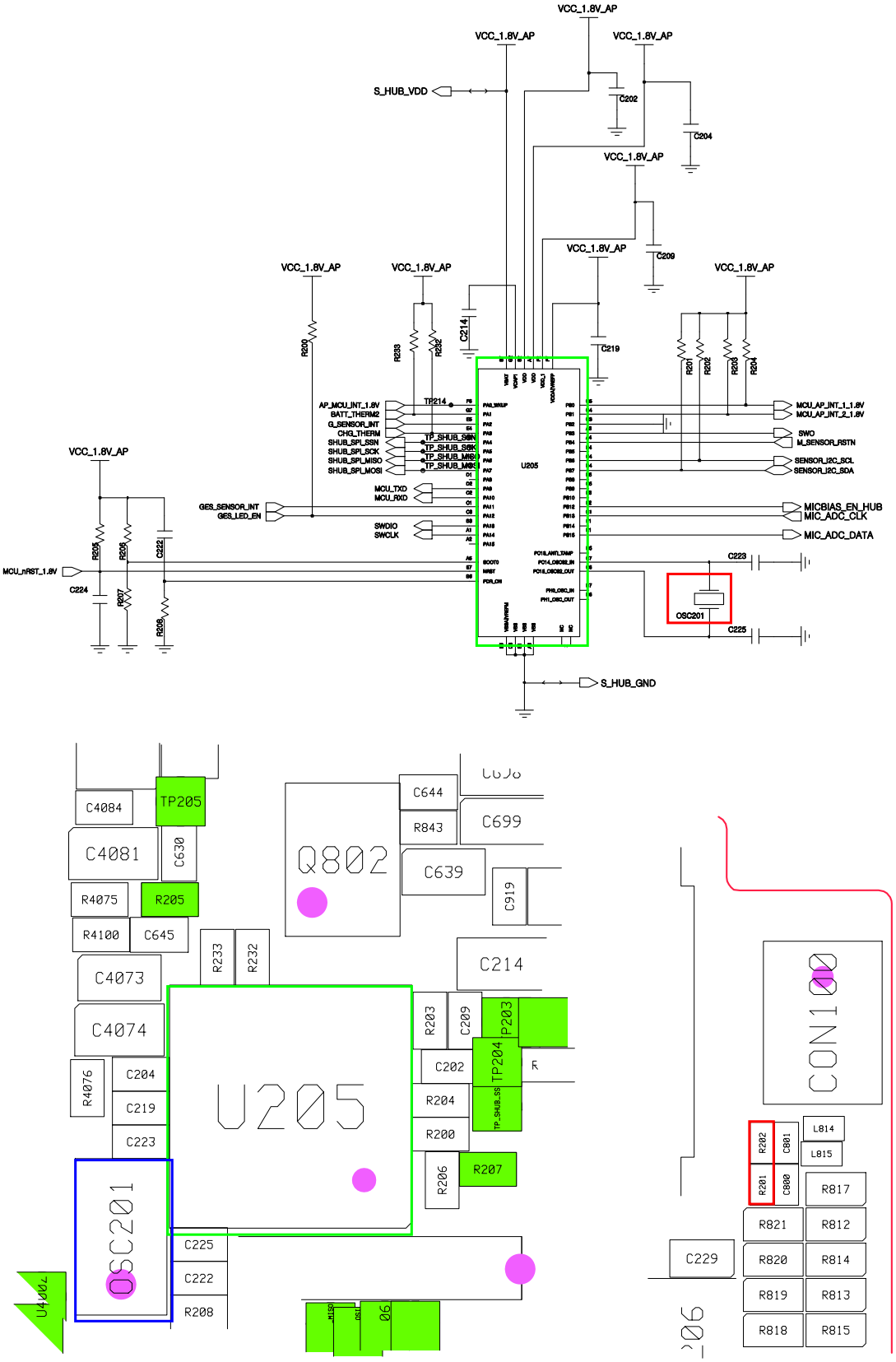

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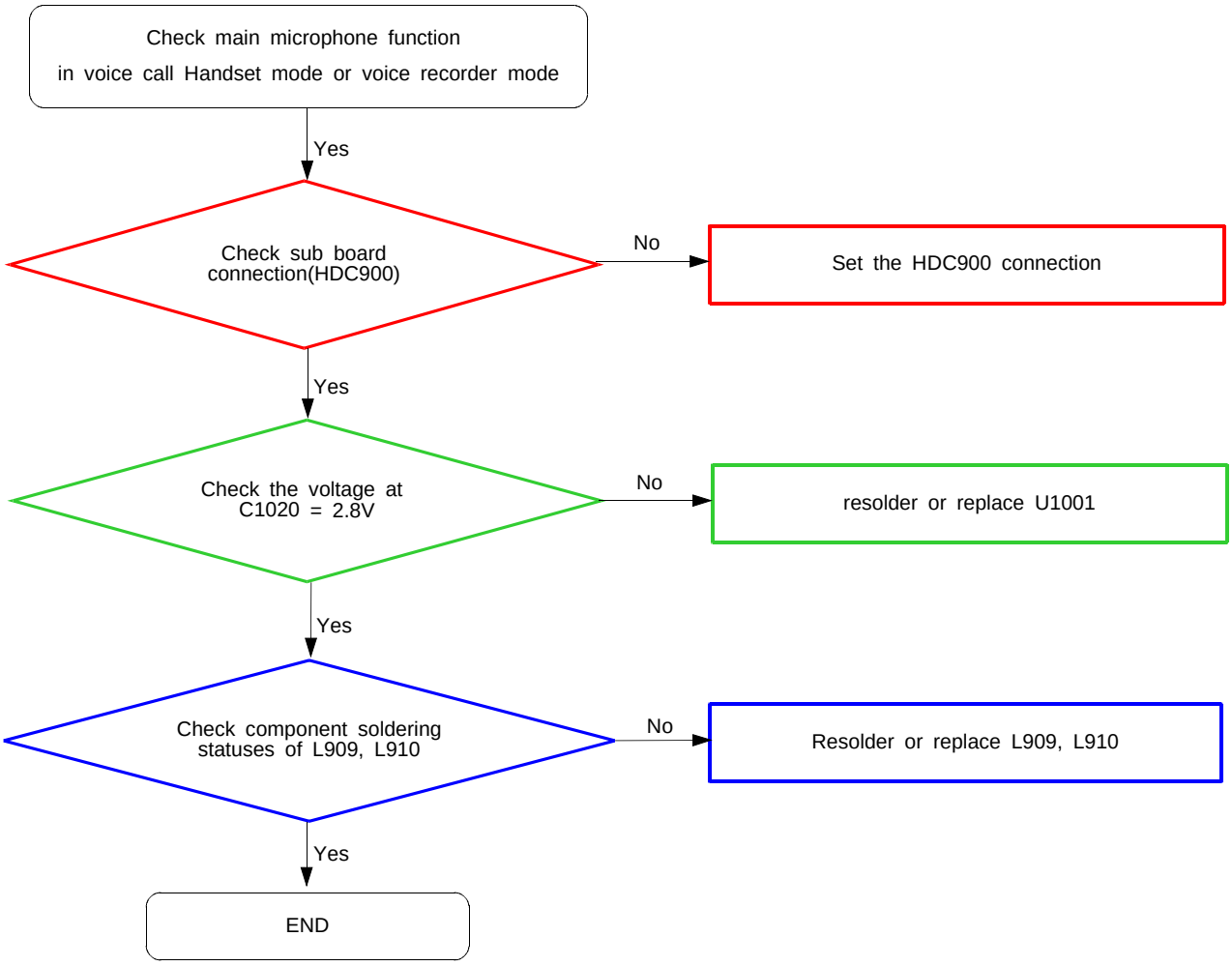
8-3-8-1 Microphone Part - Main MIC



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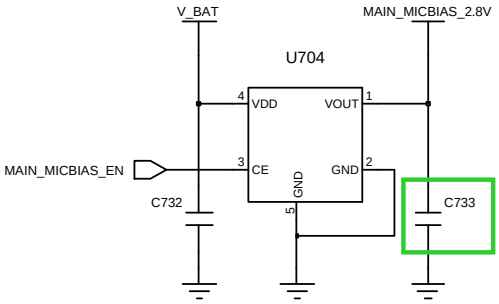

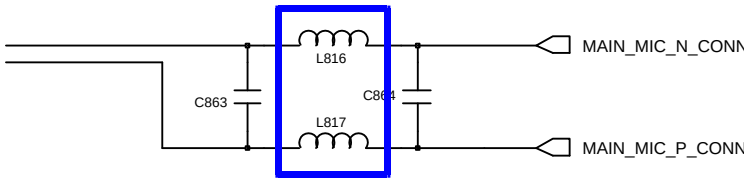

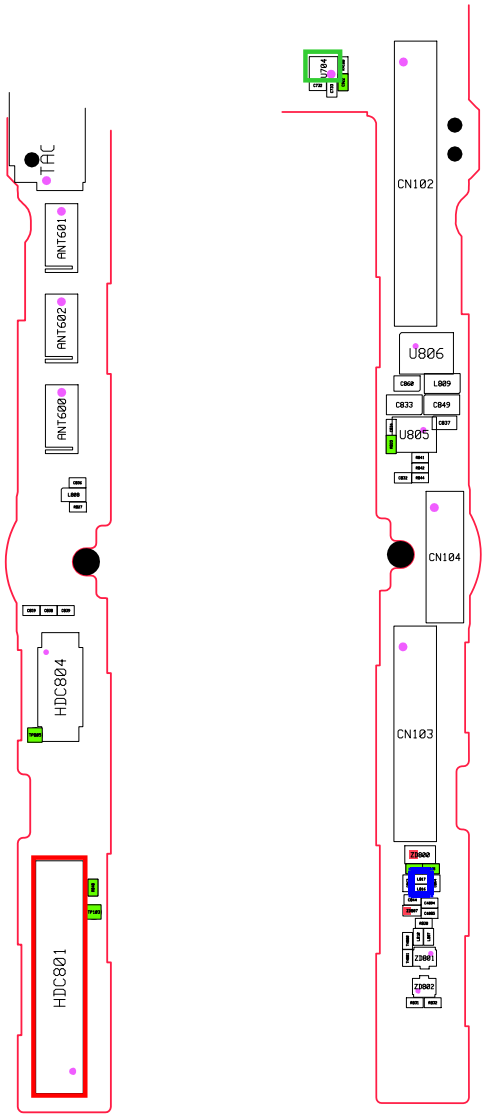

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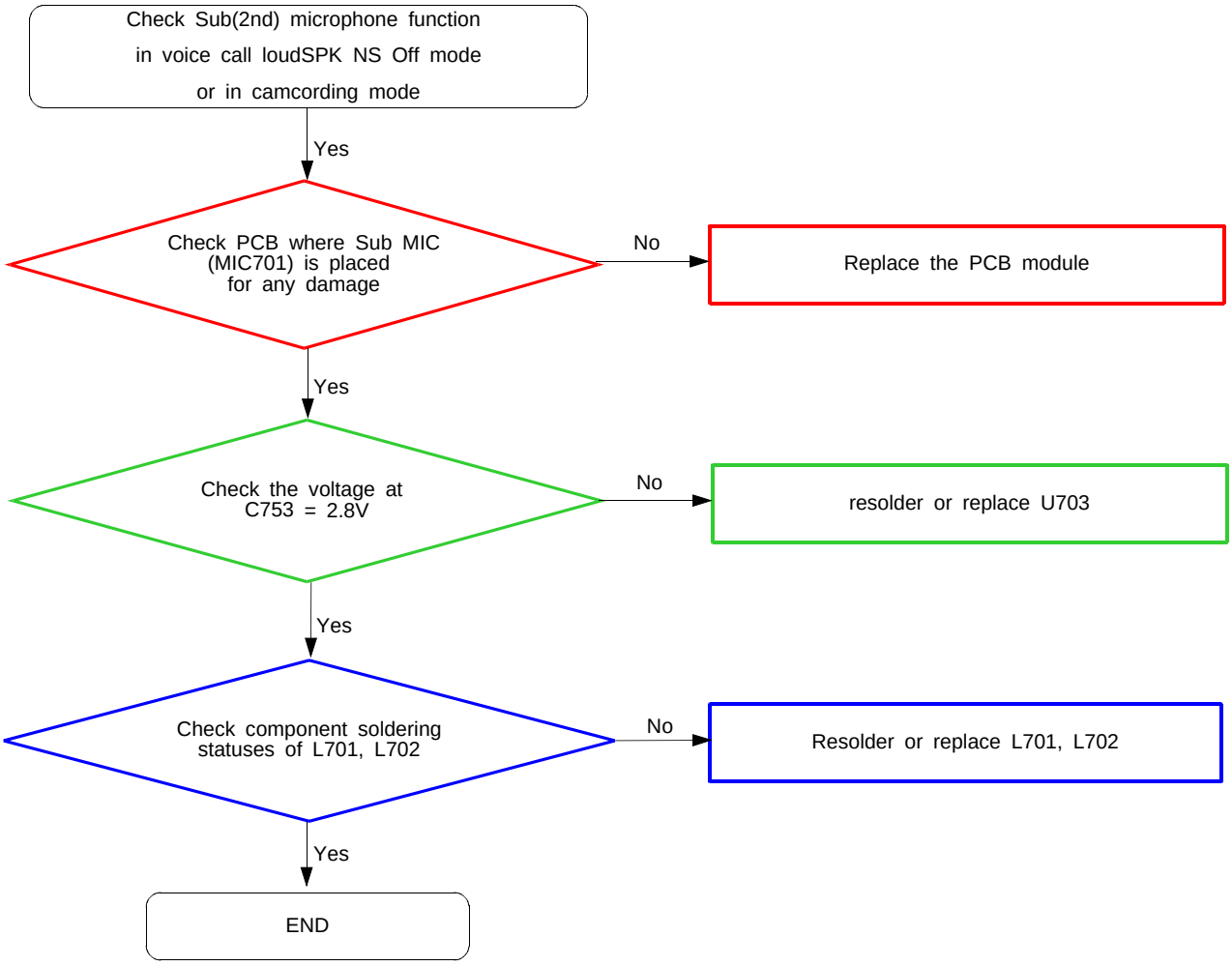
8-3-8-2. Microphone Part - Sub(2nd) MIC



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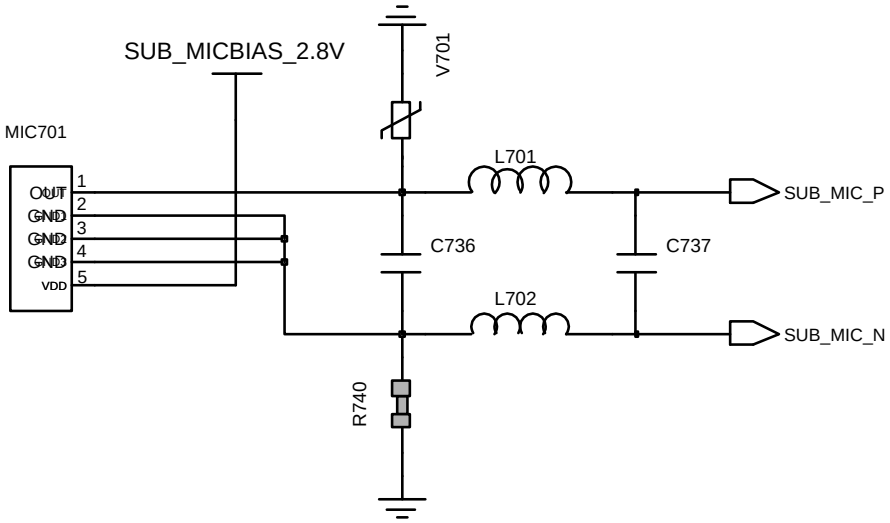

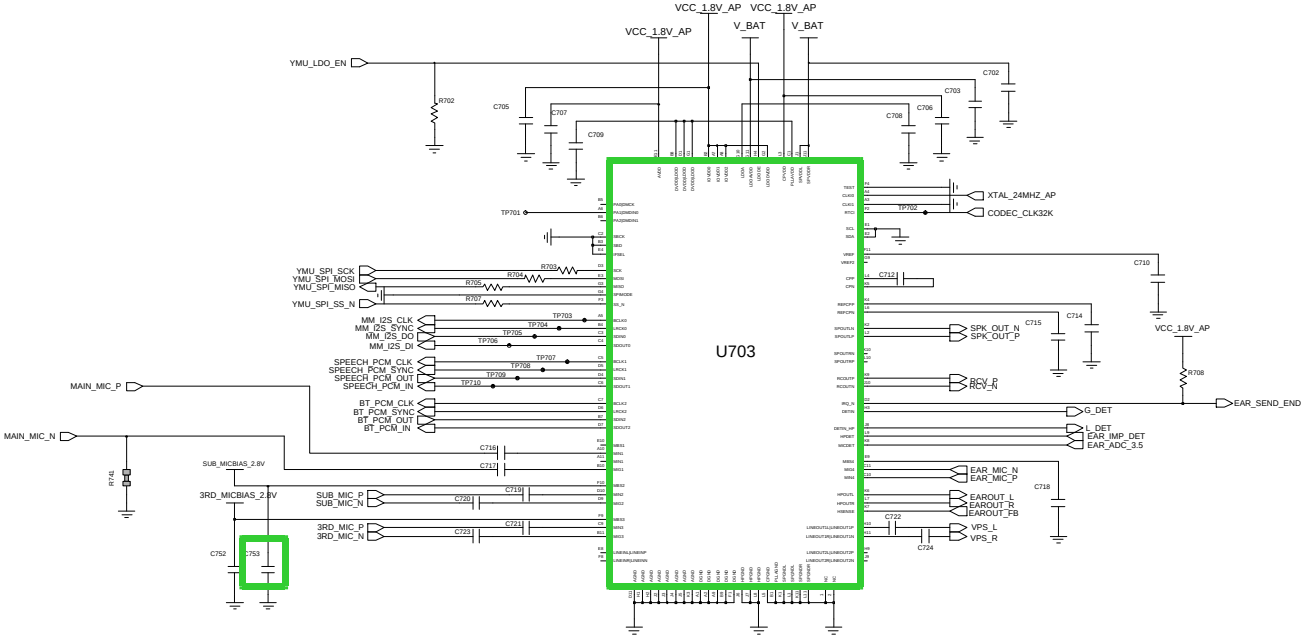

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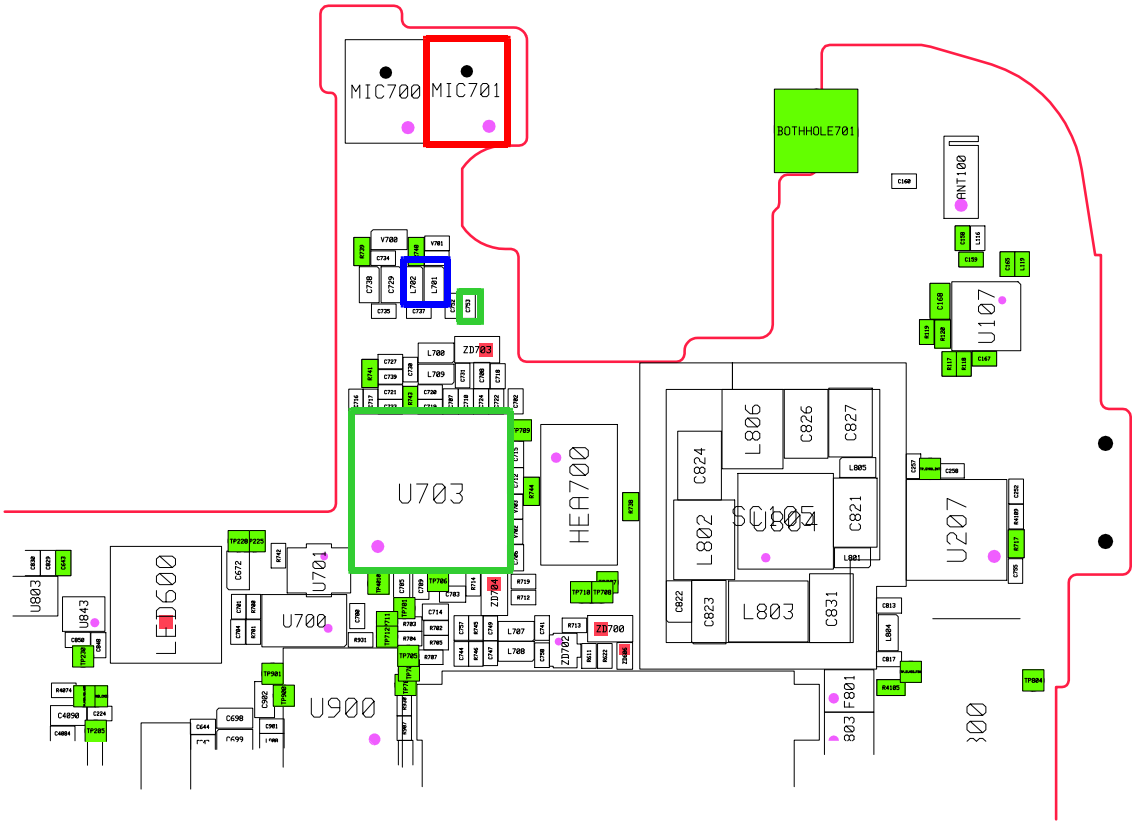

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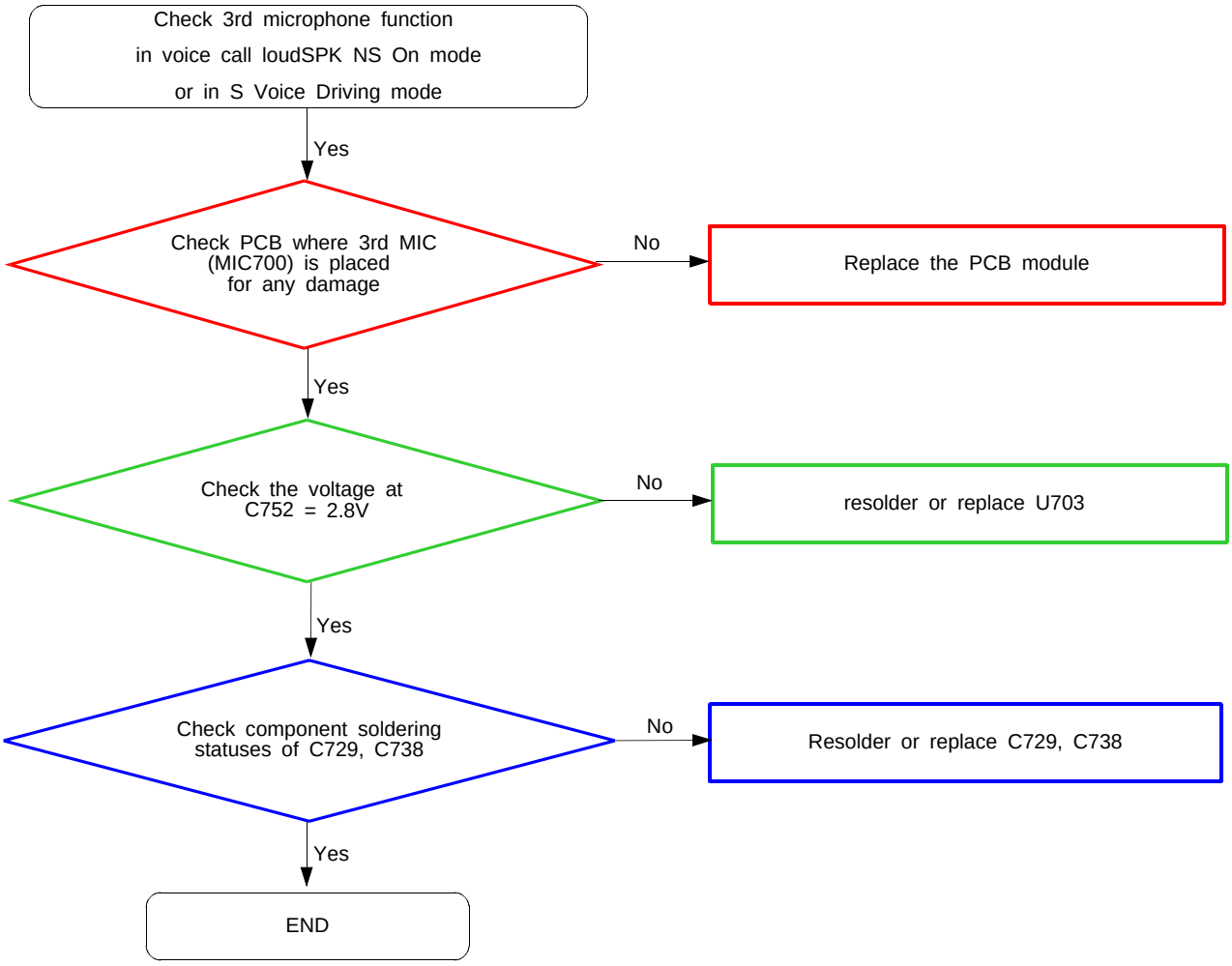
8-3-8-3. Microphone Part - 3rd MIC



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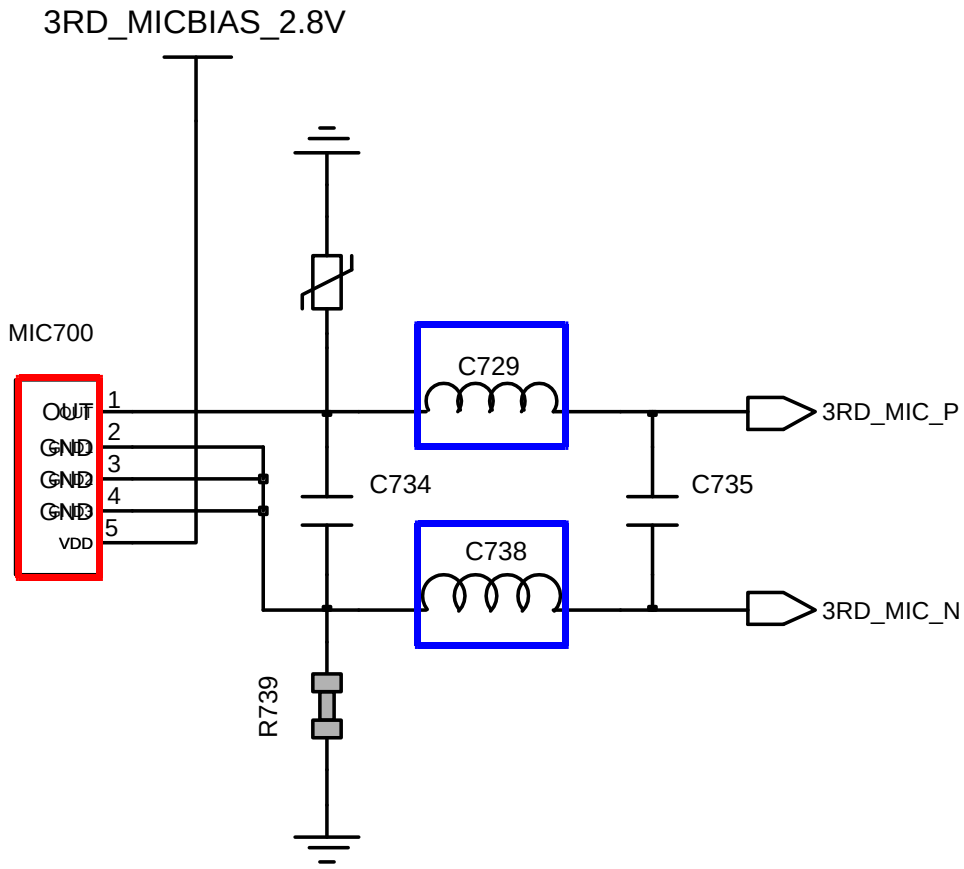

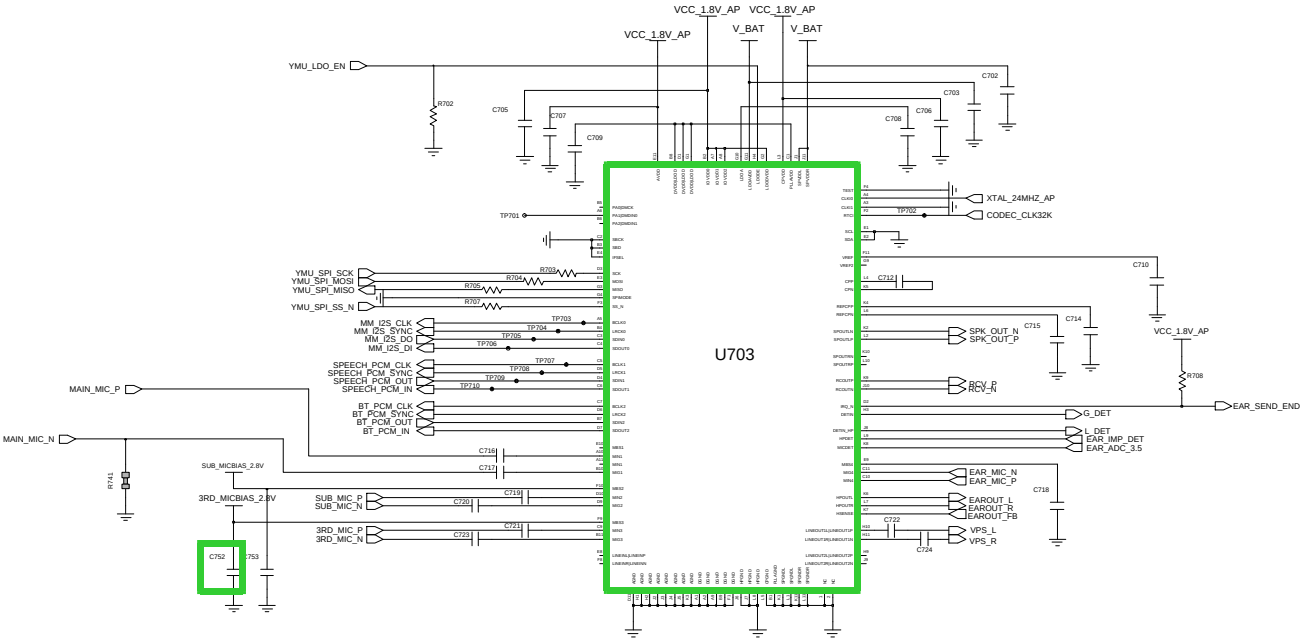

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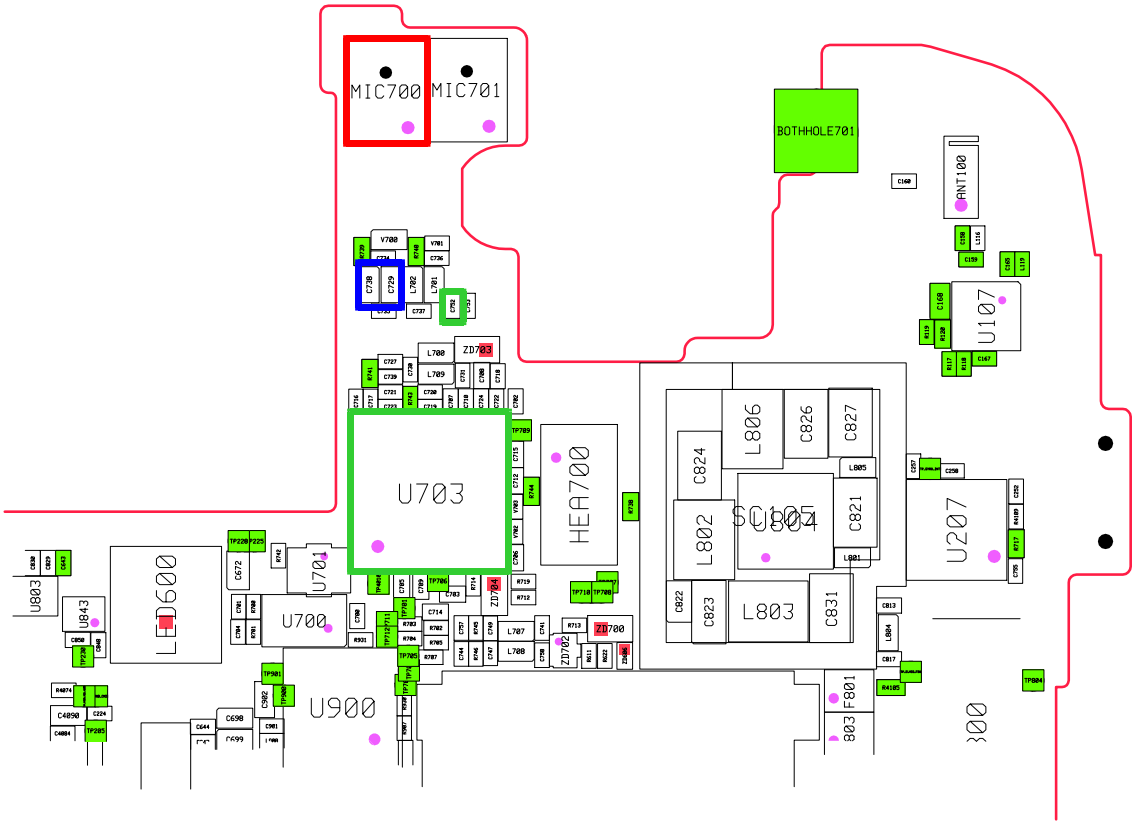

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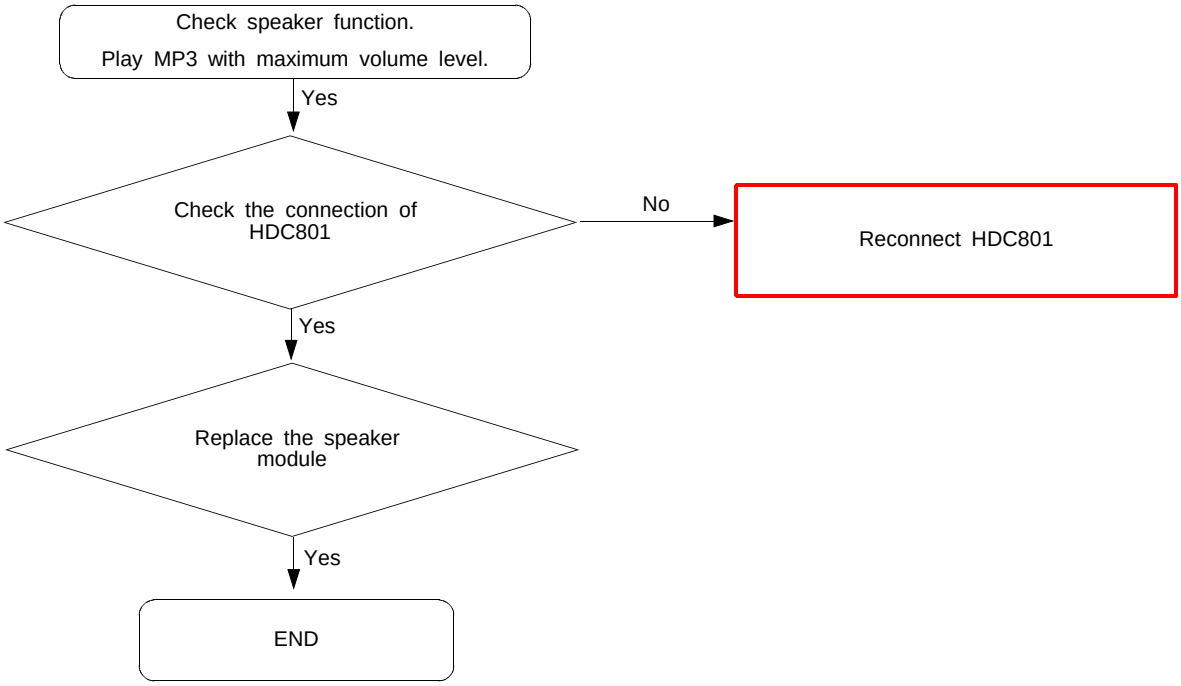
8-3-9. Speaker Part



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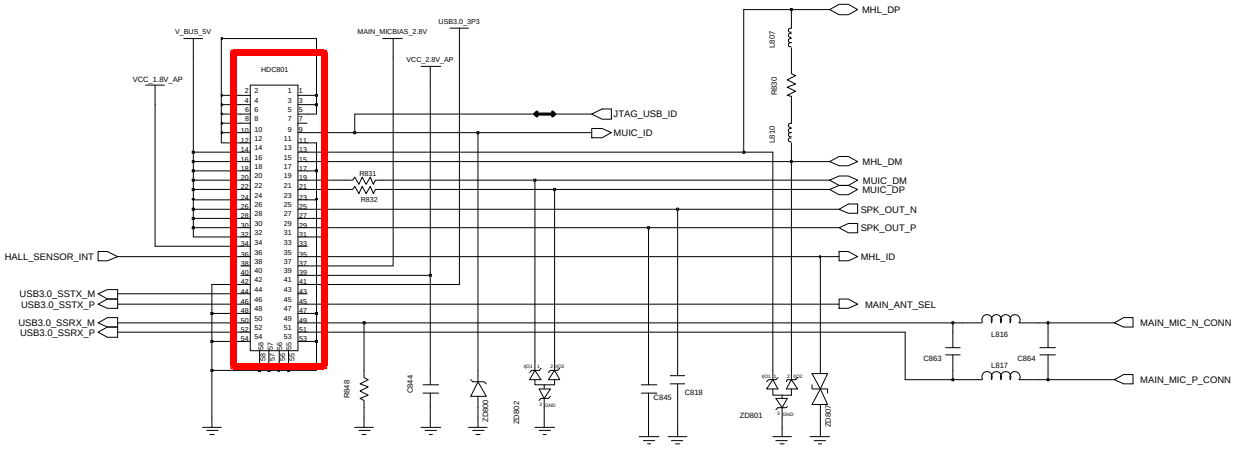

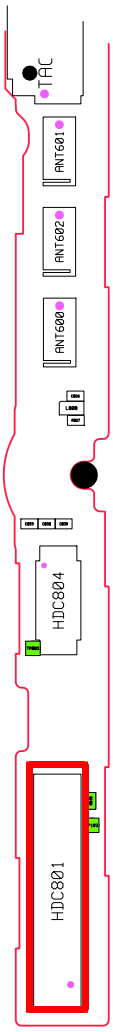

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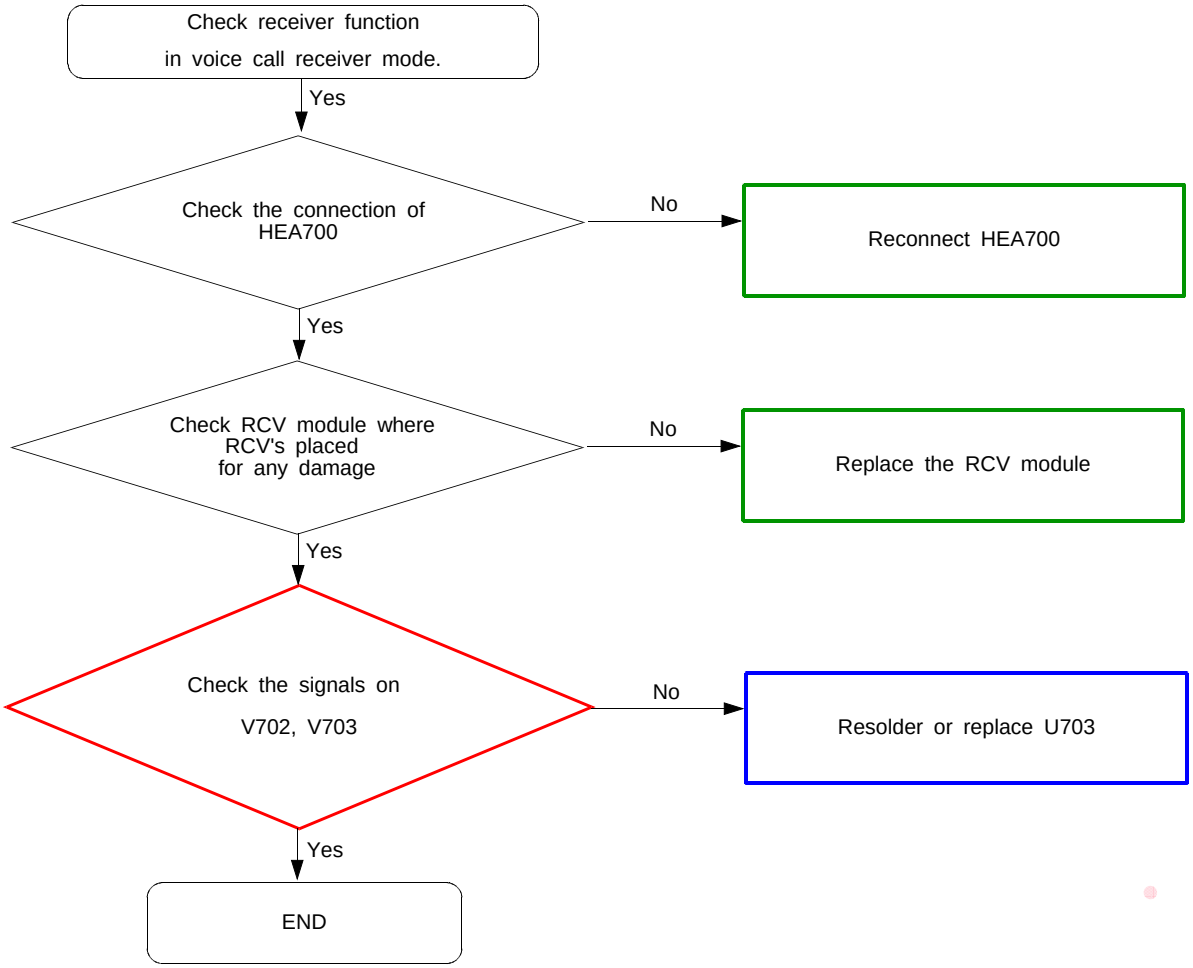
8-3-10. Receiver Part



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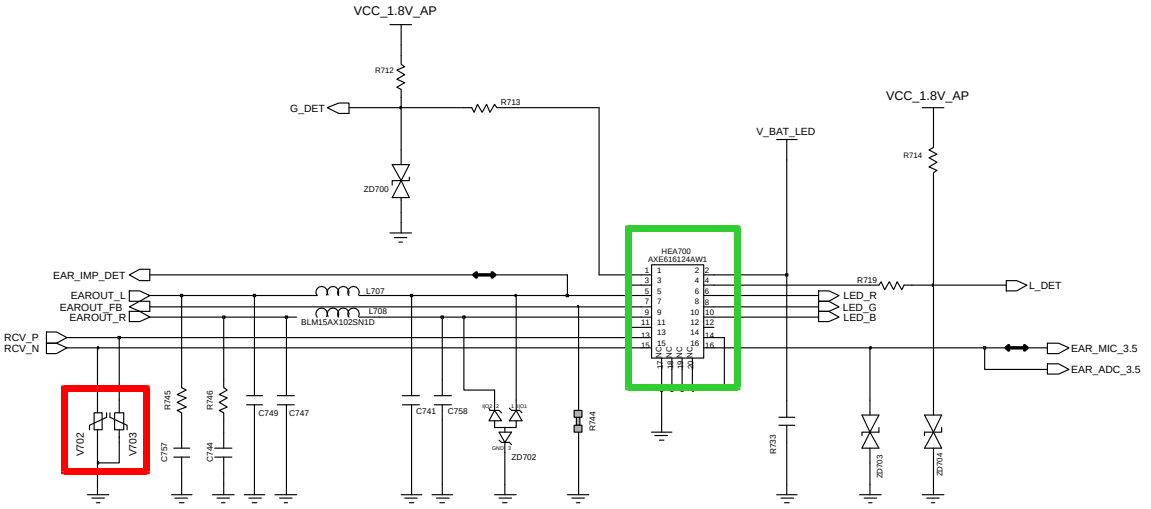

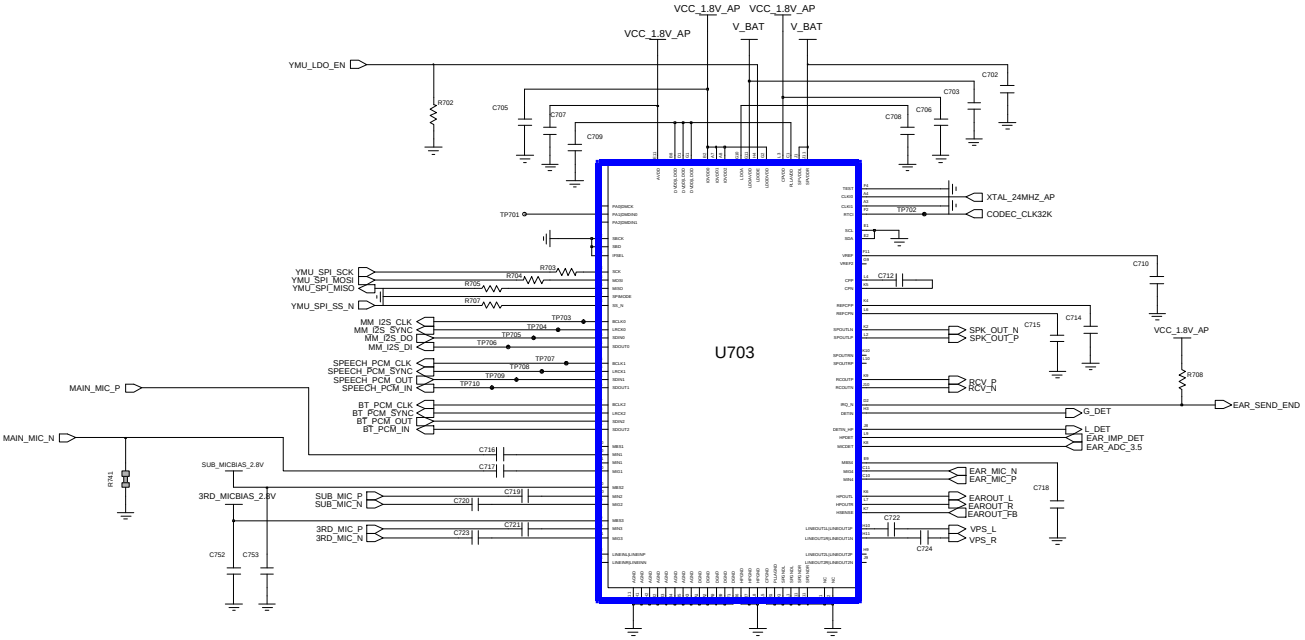

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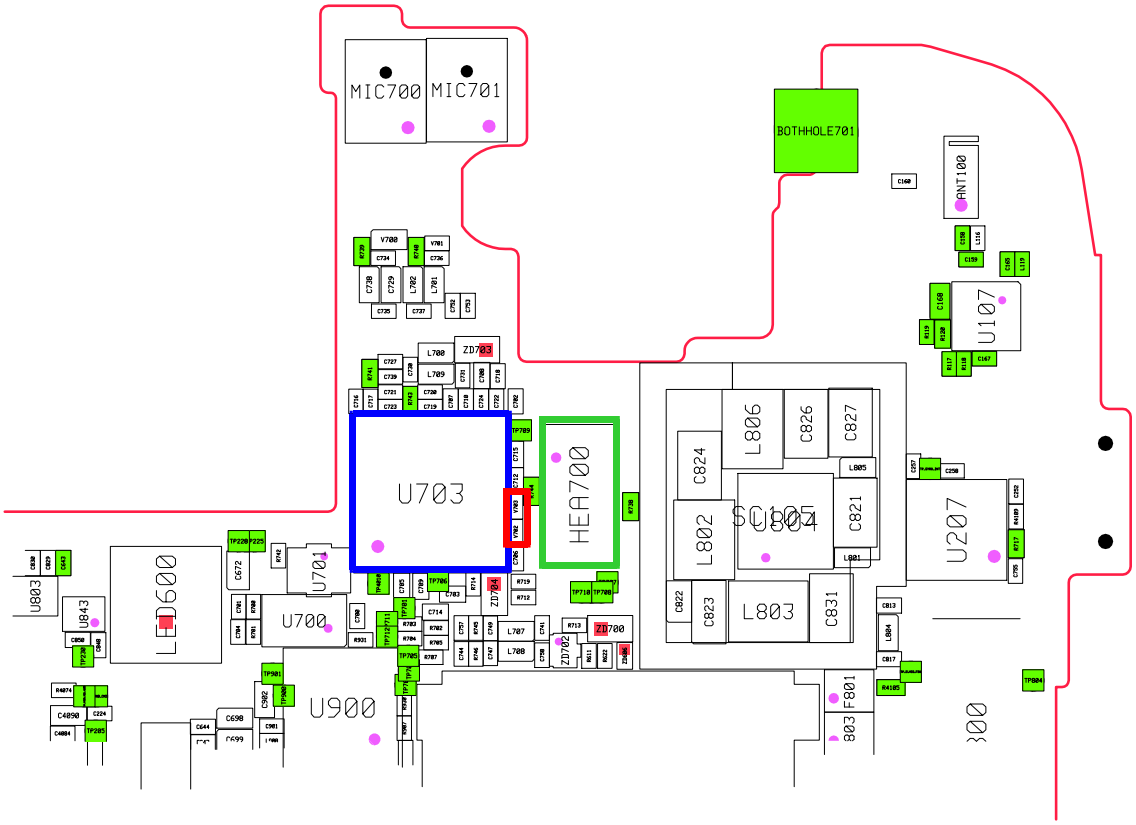

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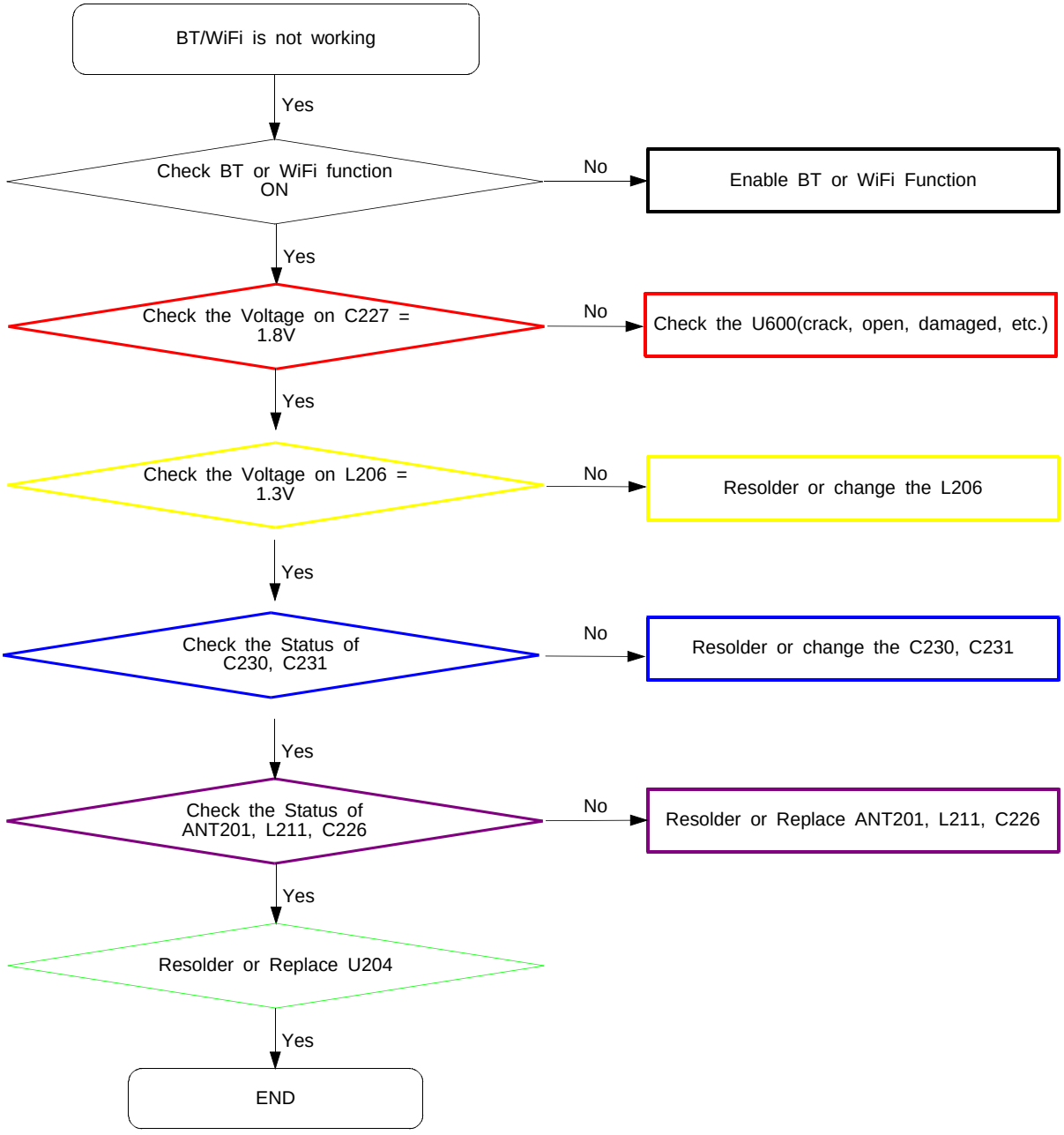
8-3-11. BT/WIFI



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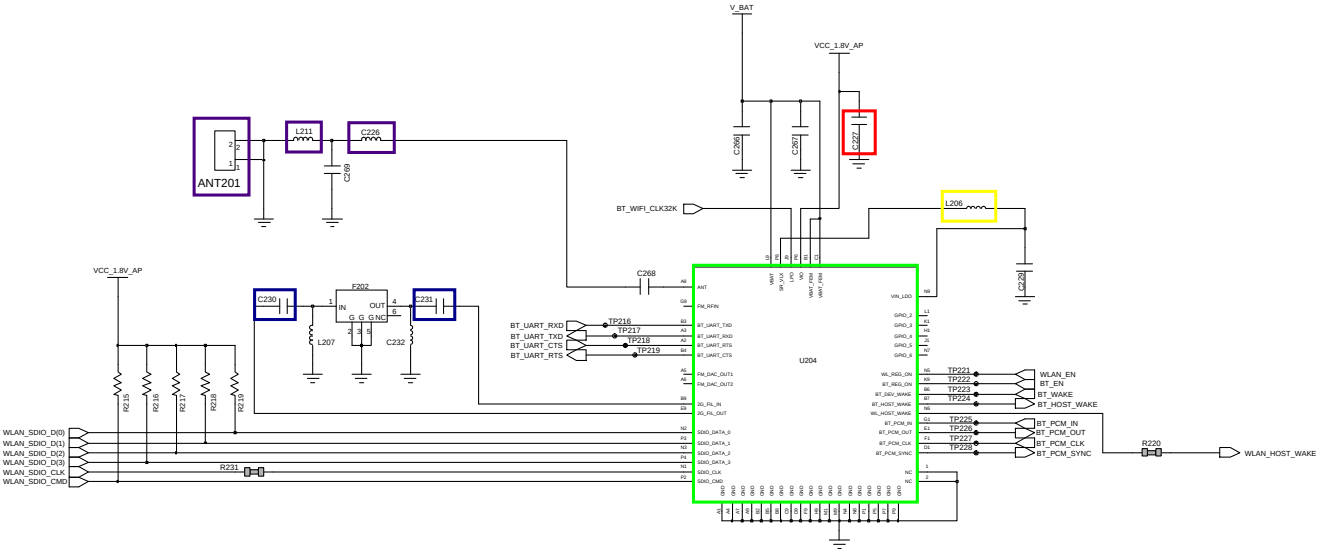

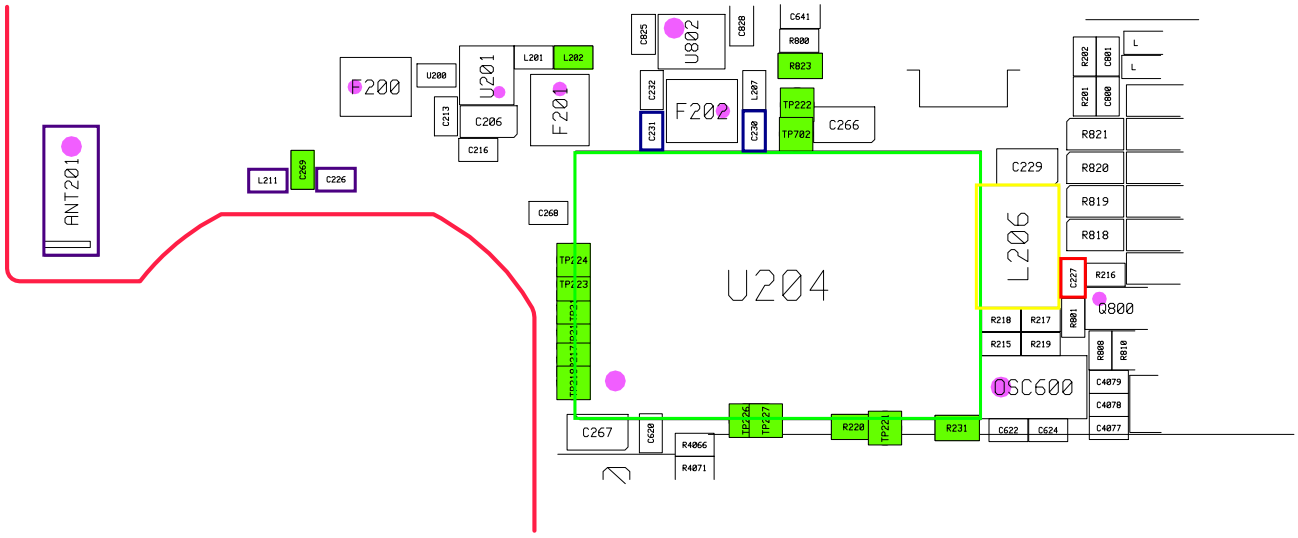

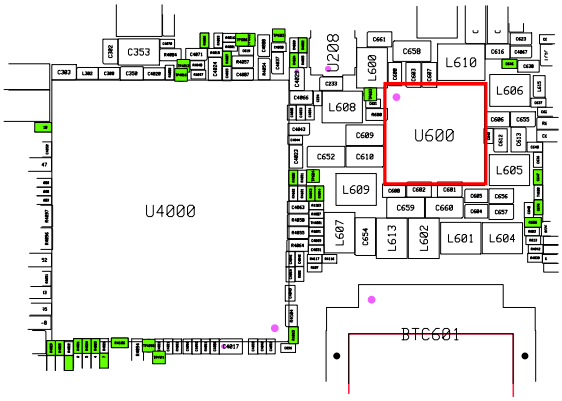

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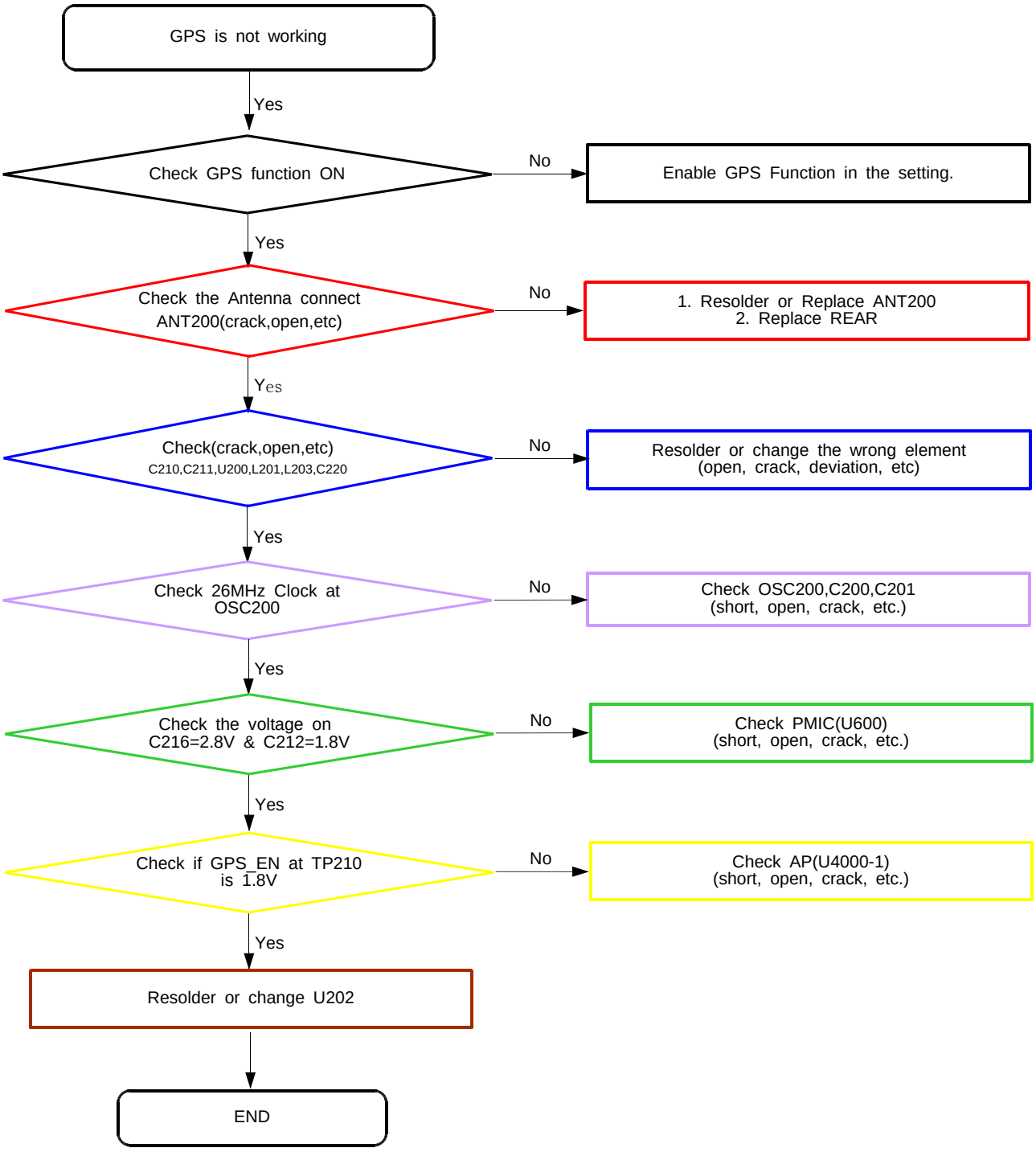
8-4-22. GPS



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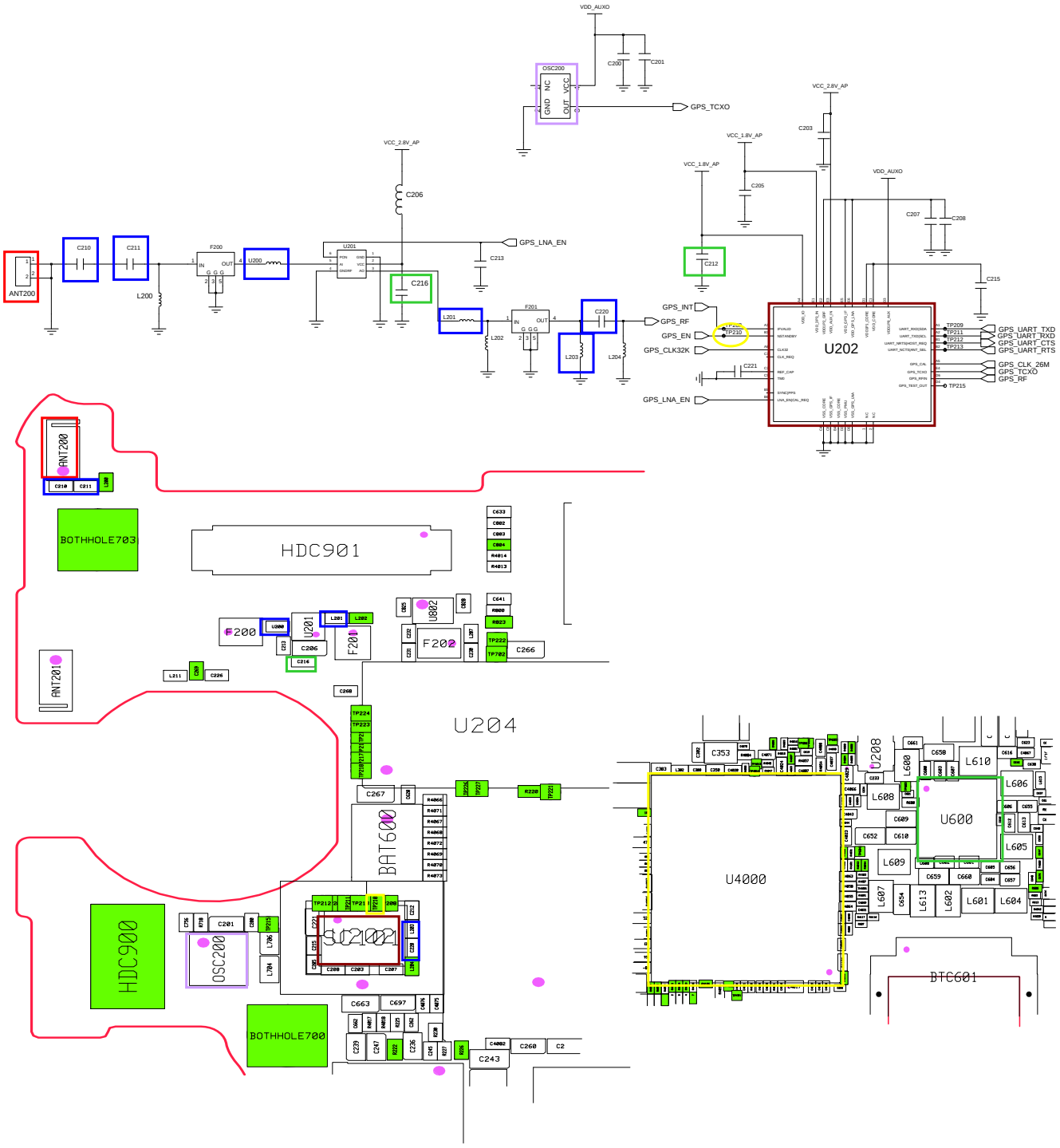

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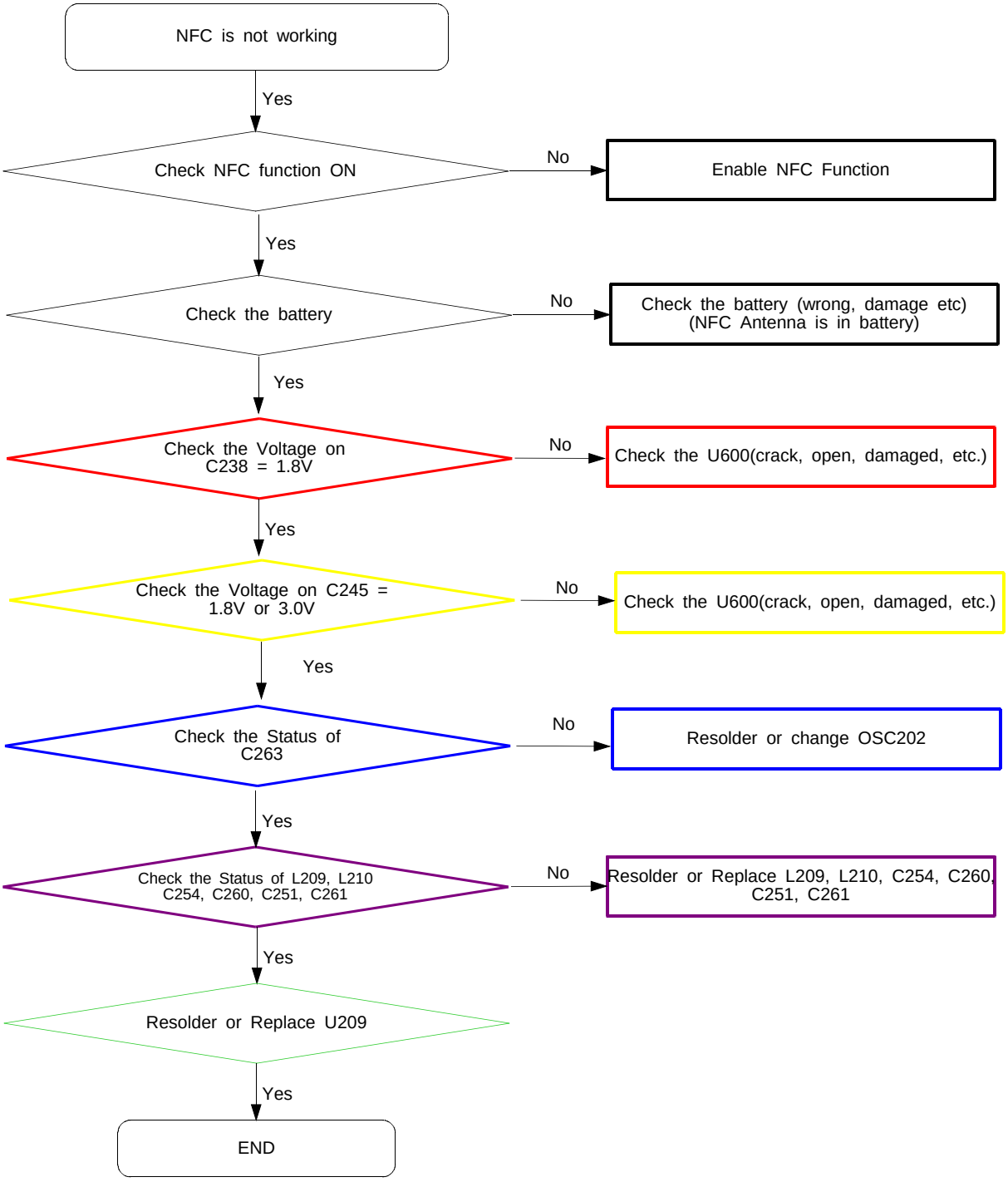
8-3-13. NFC



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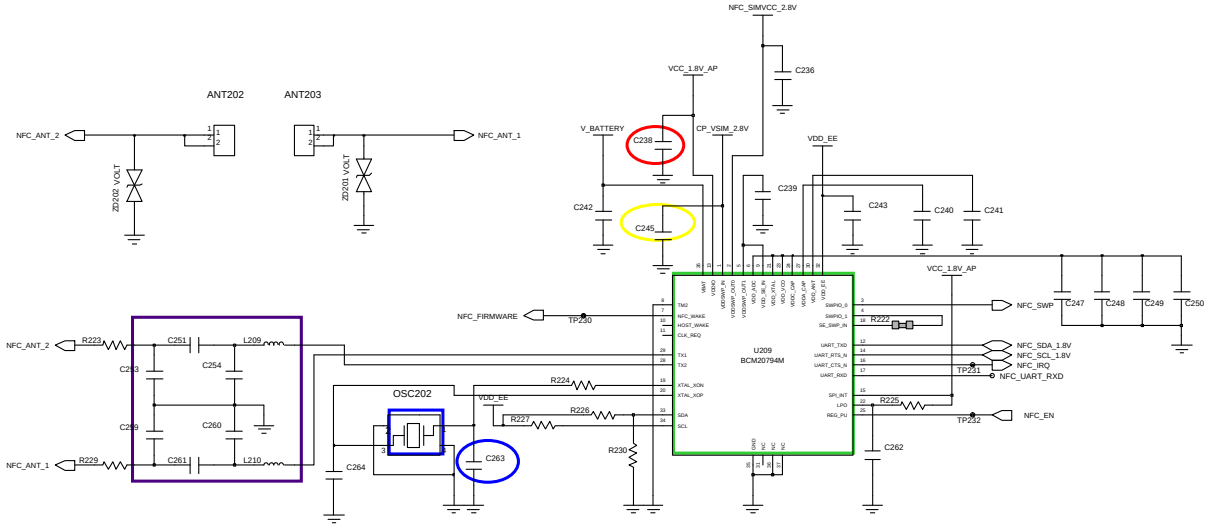

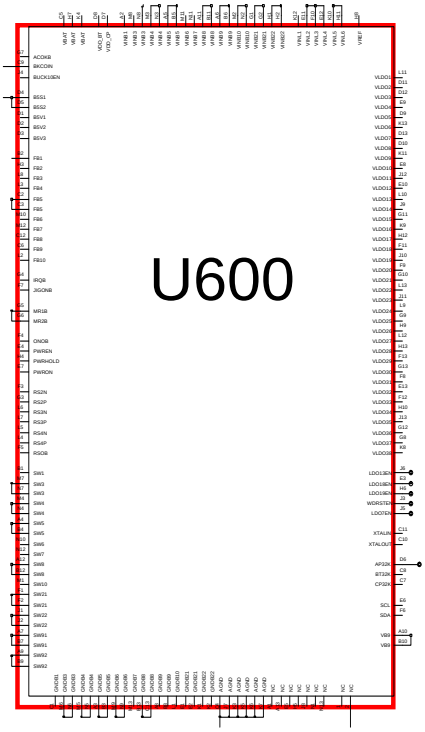

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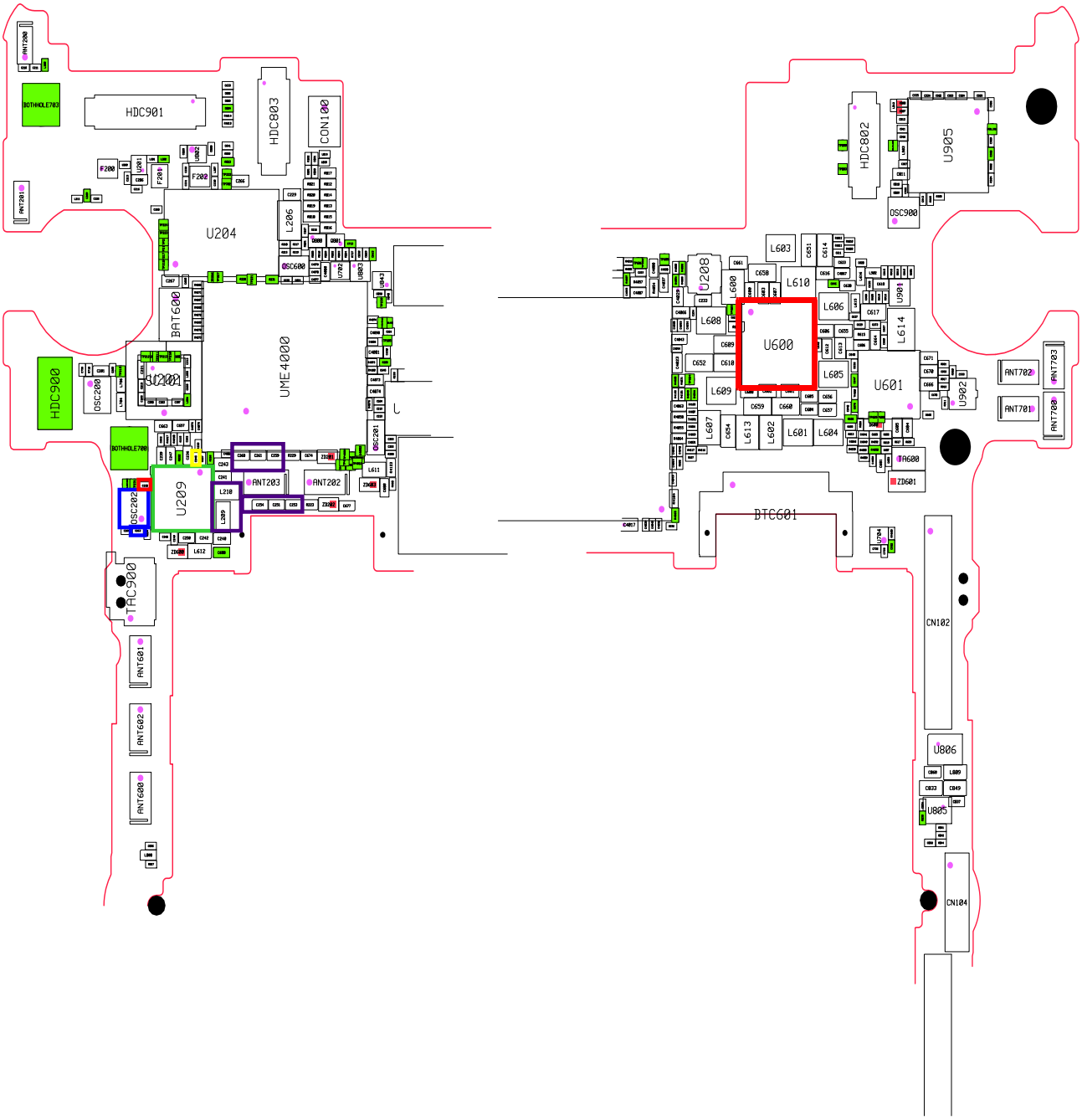

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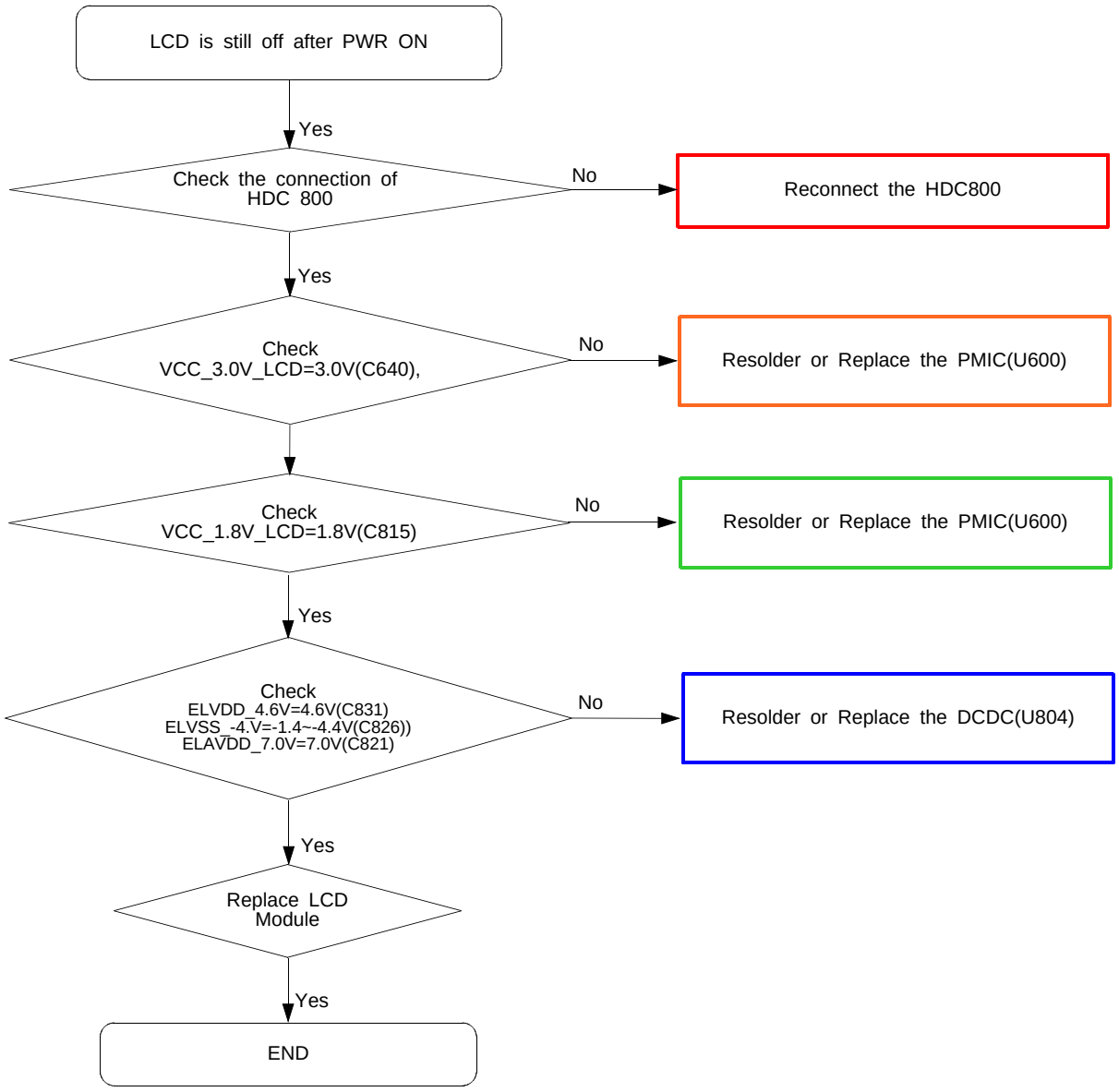
8-3-14. LCD



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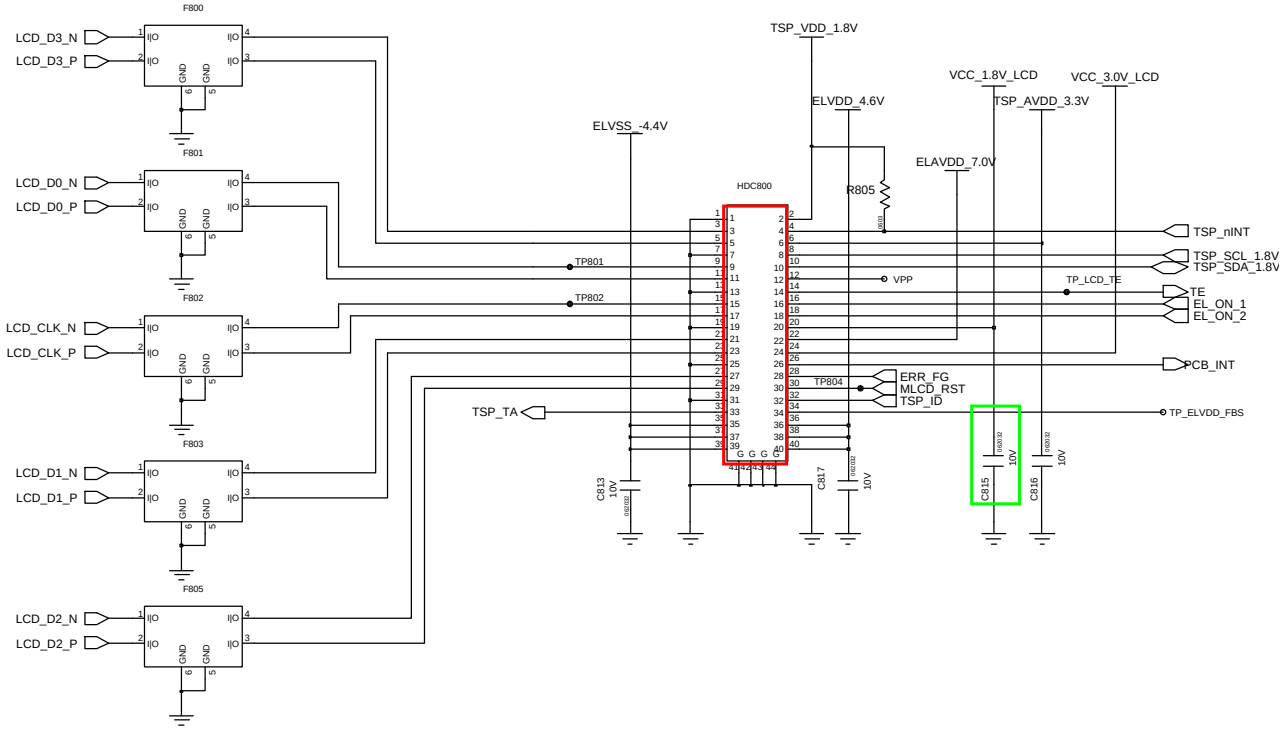

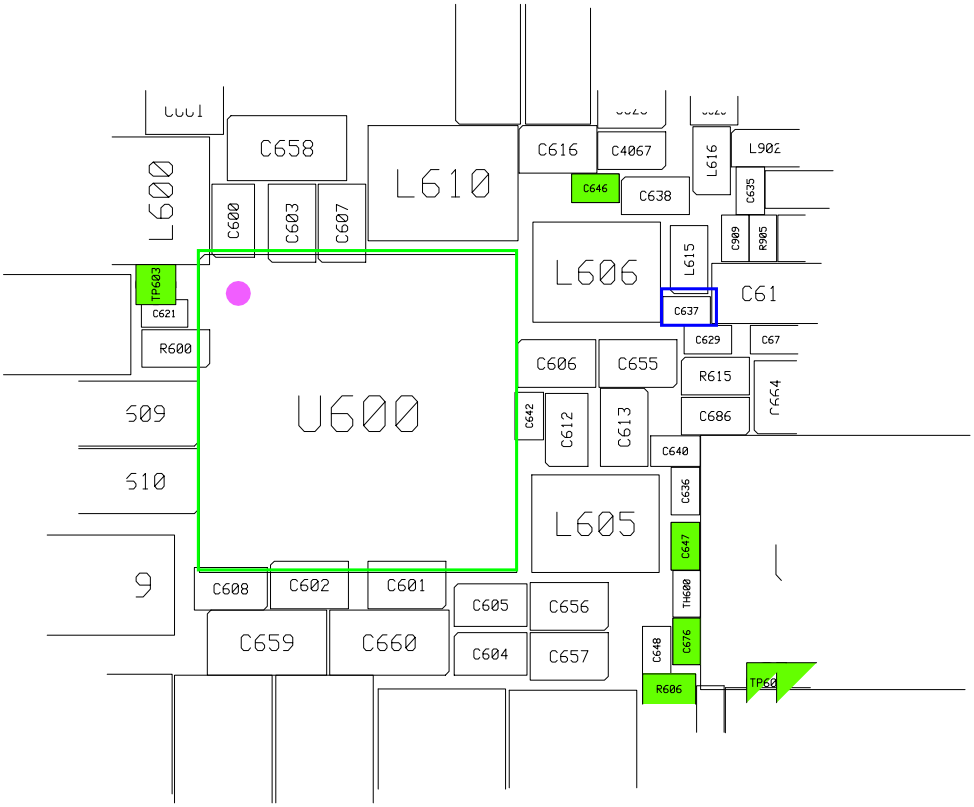

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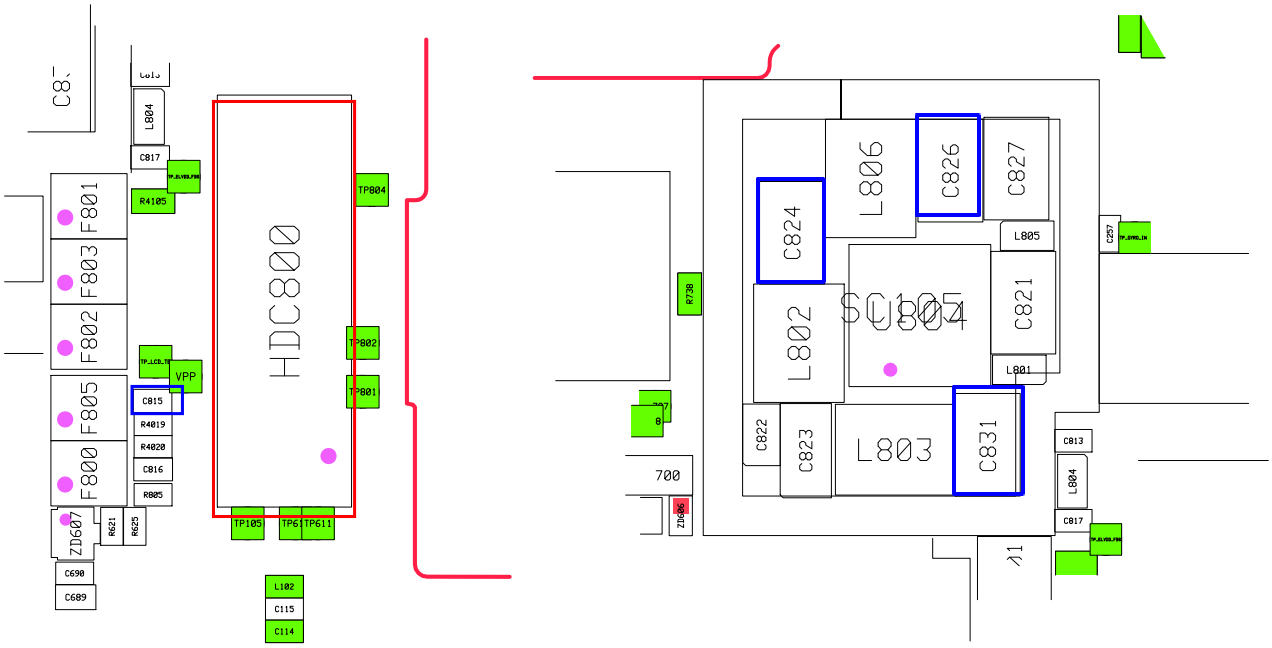

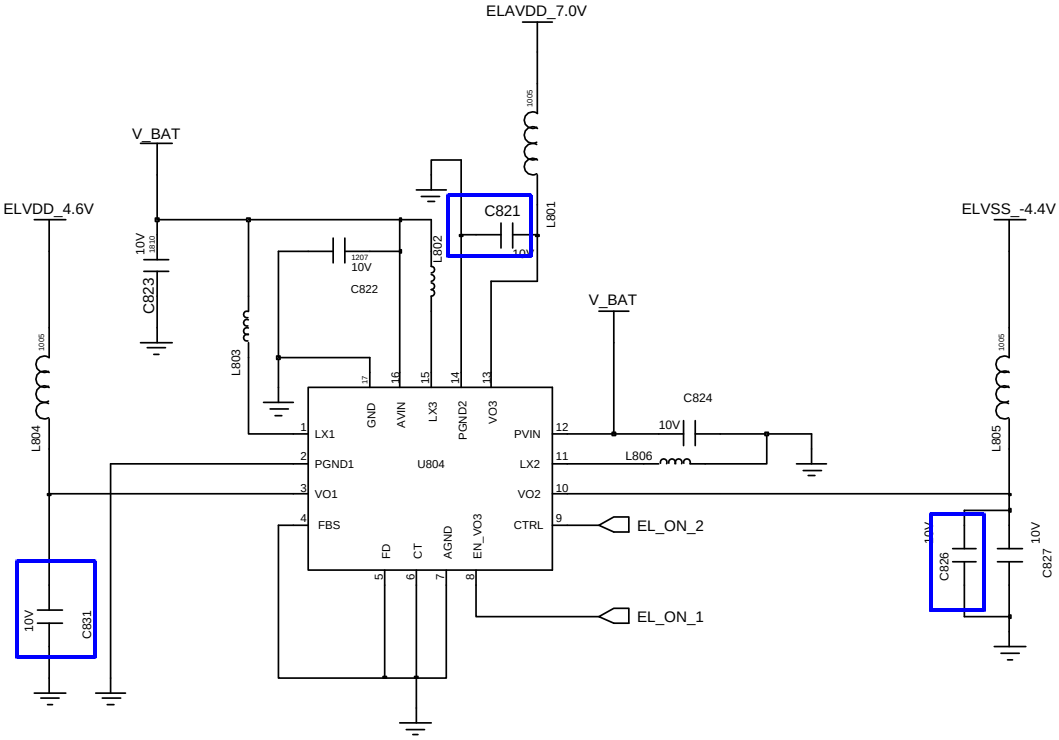

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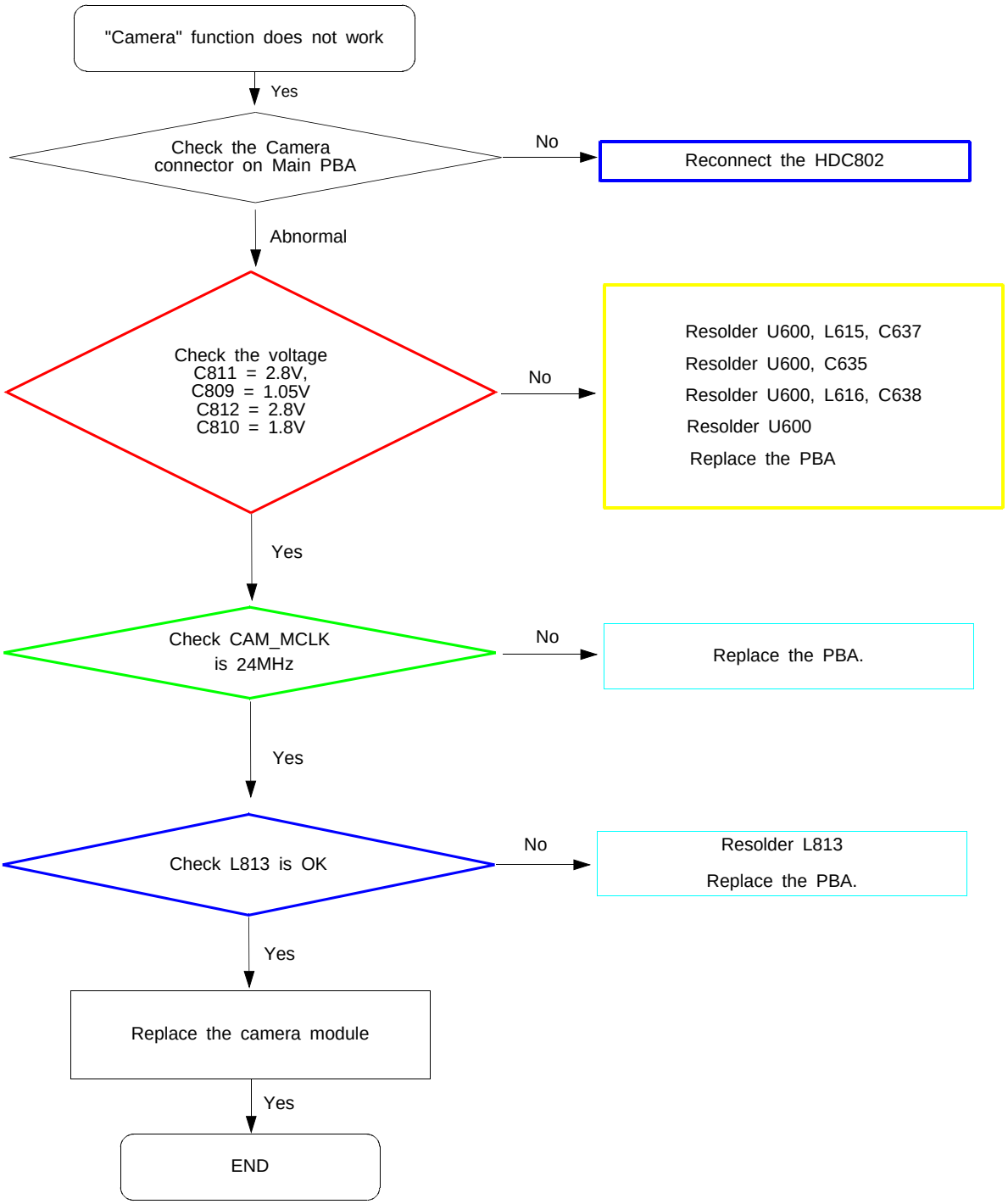
8-3-15. 13M CAM



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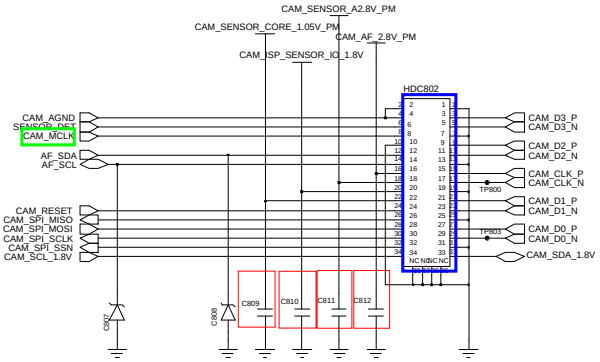

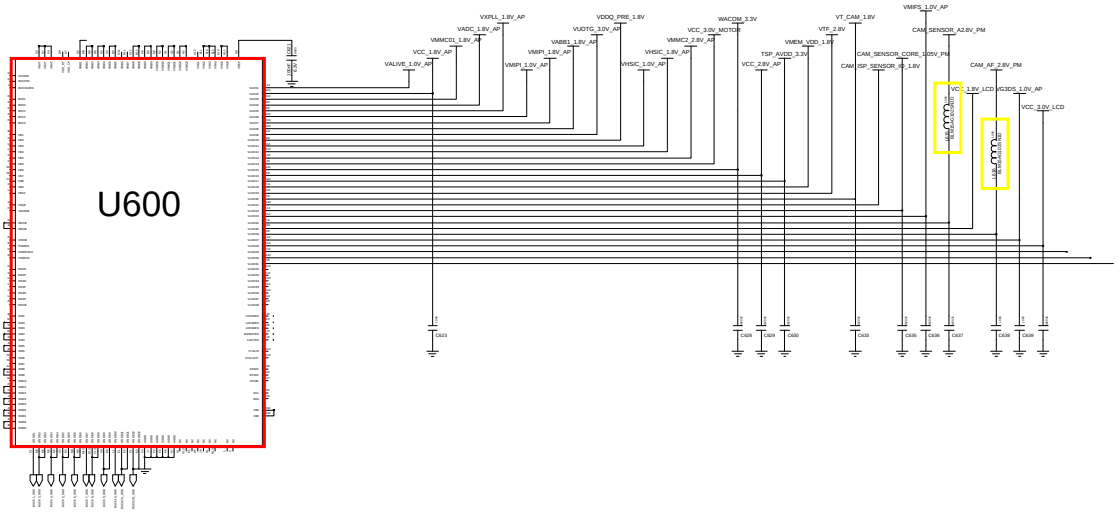

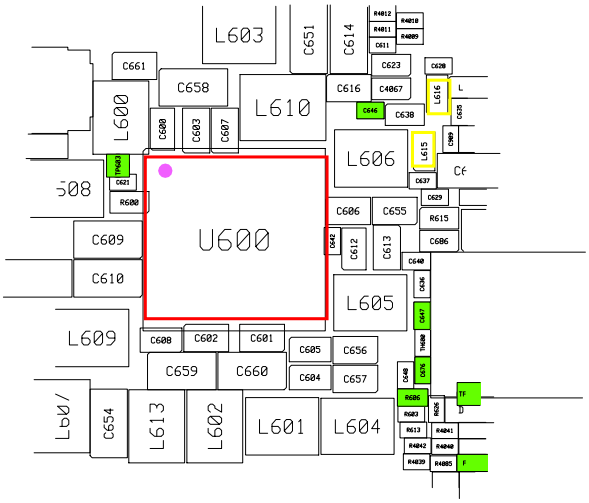

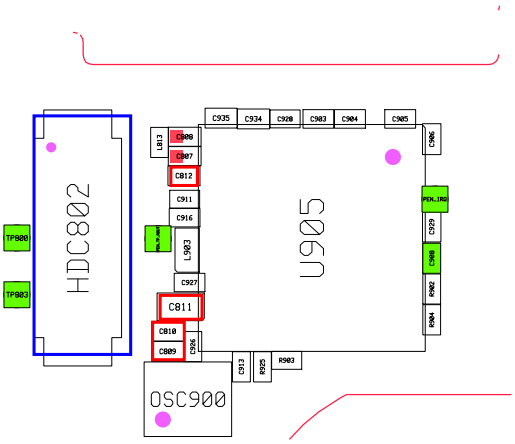

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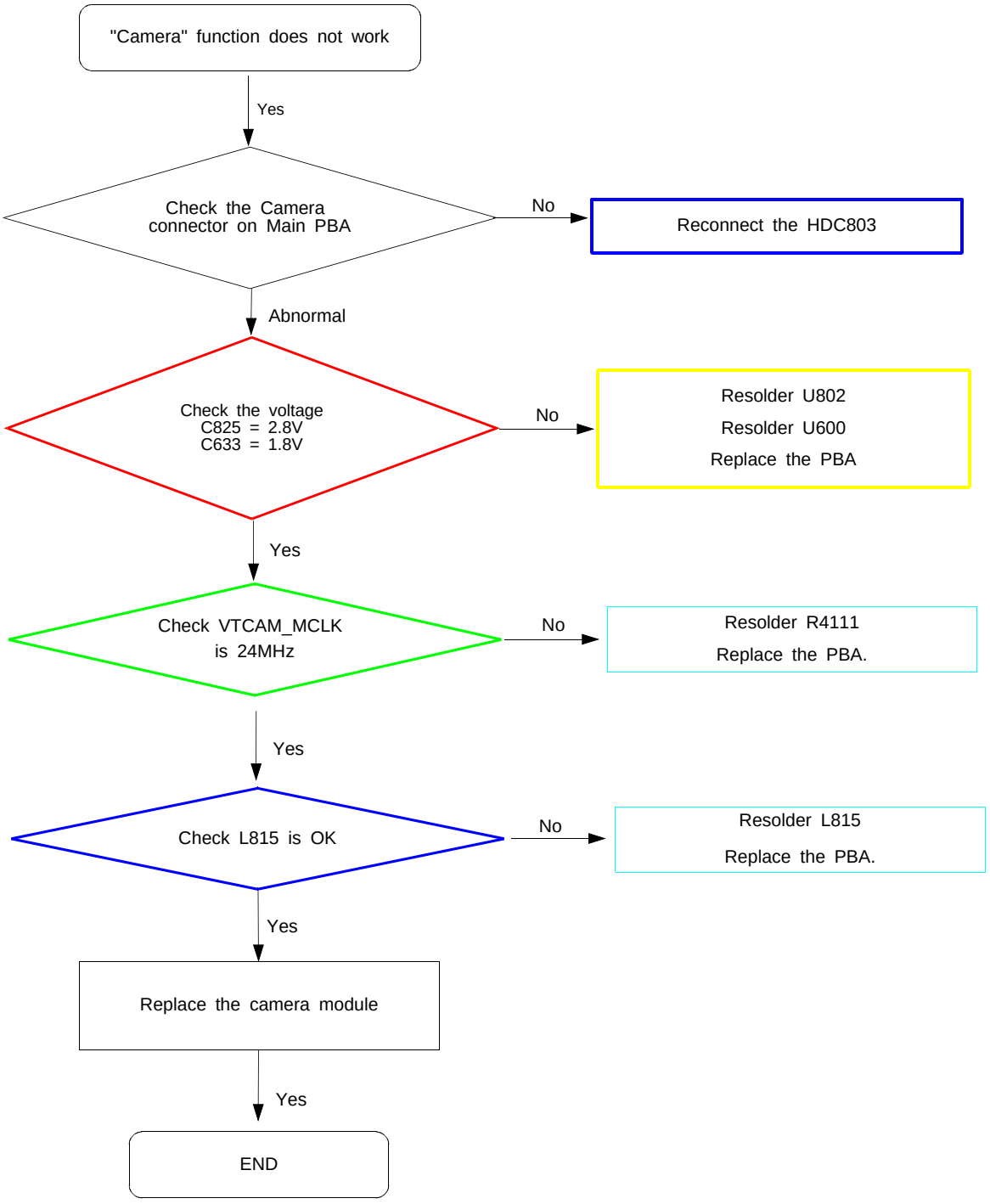
8-3-16. VT CAM



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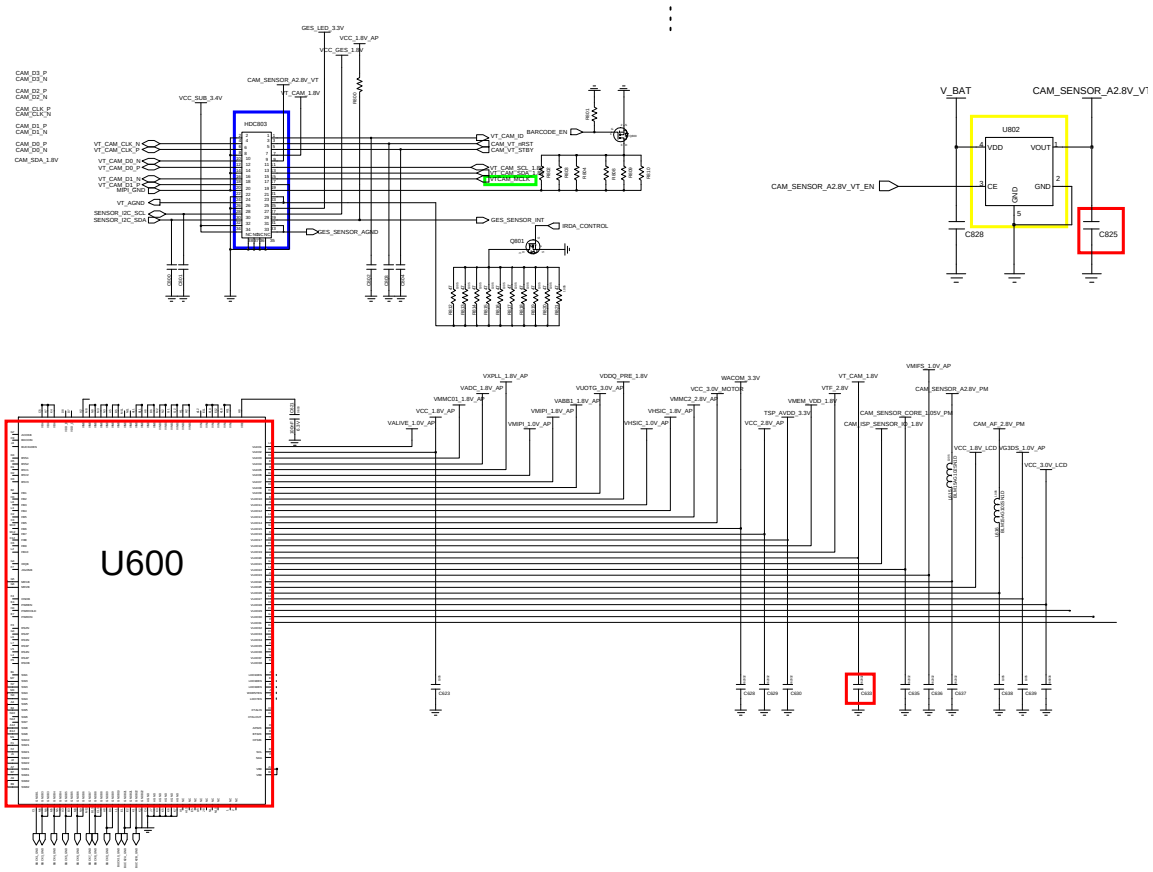

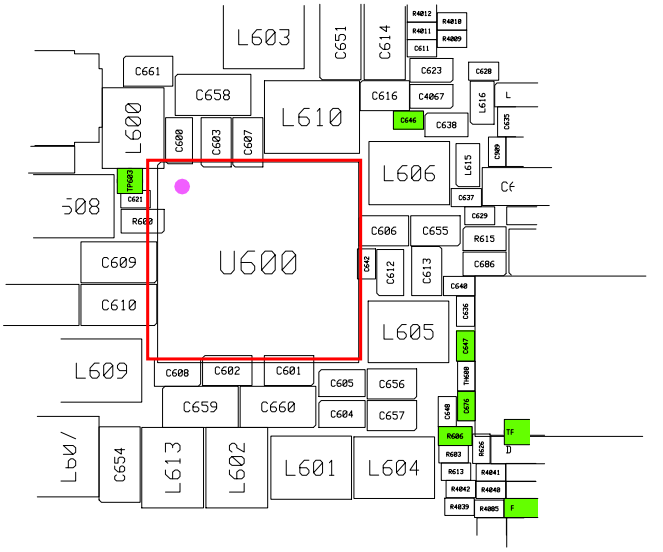

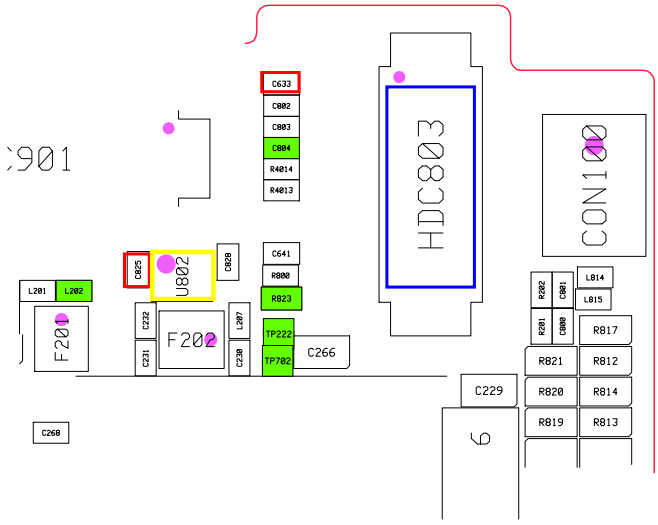

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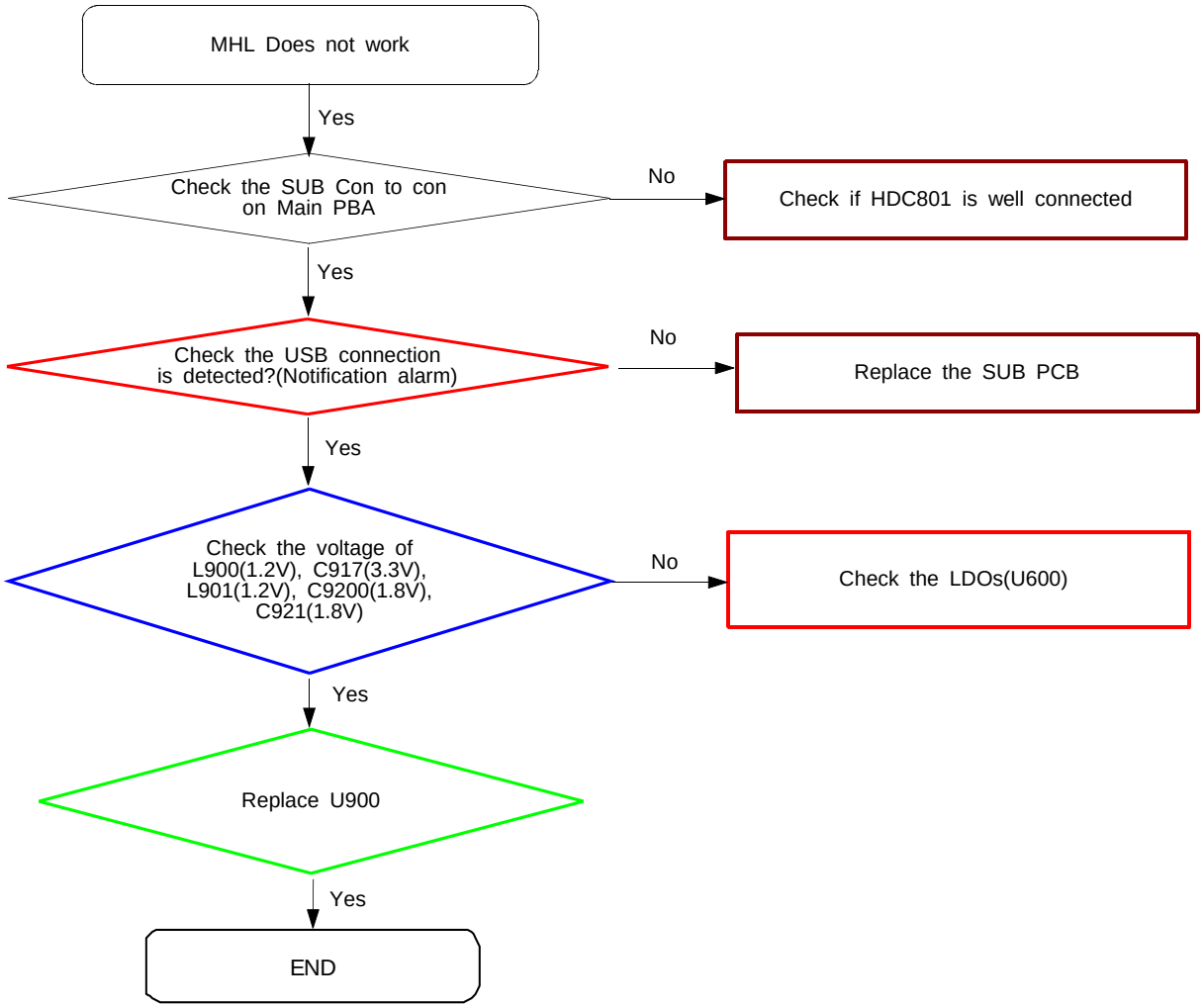
8-3-17. MHL



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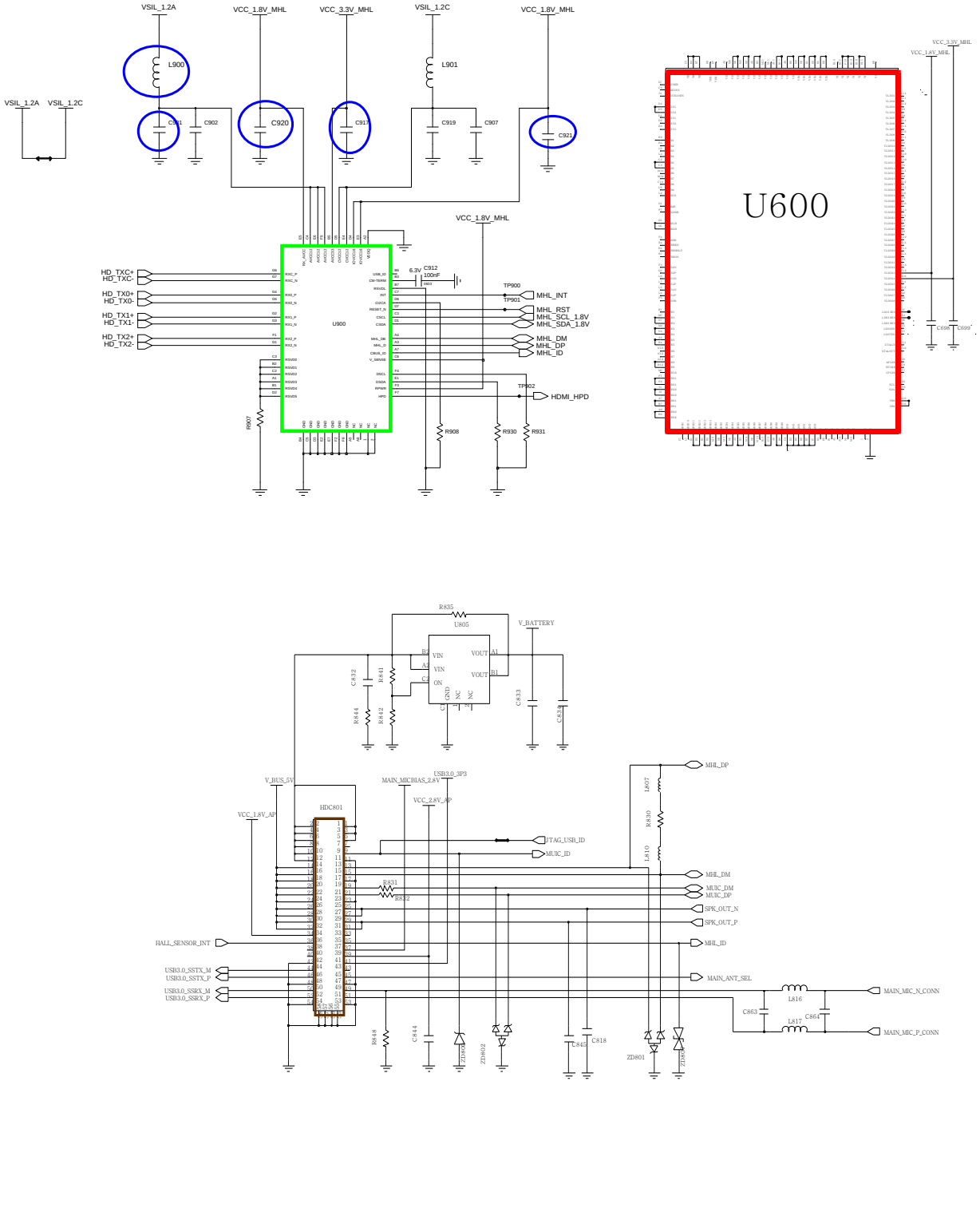

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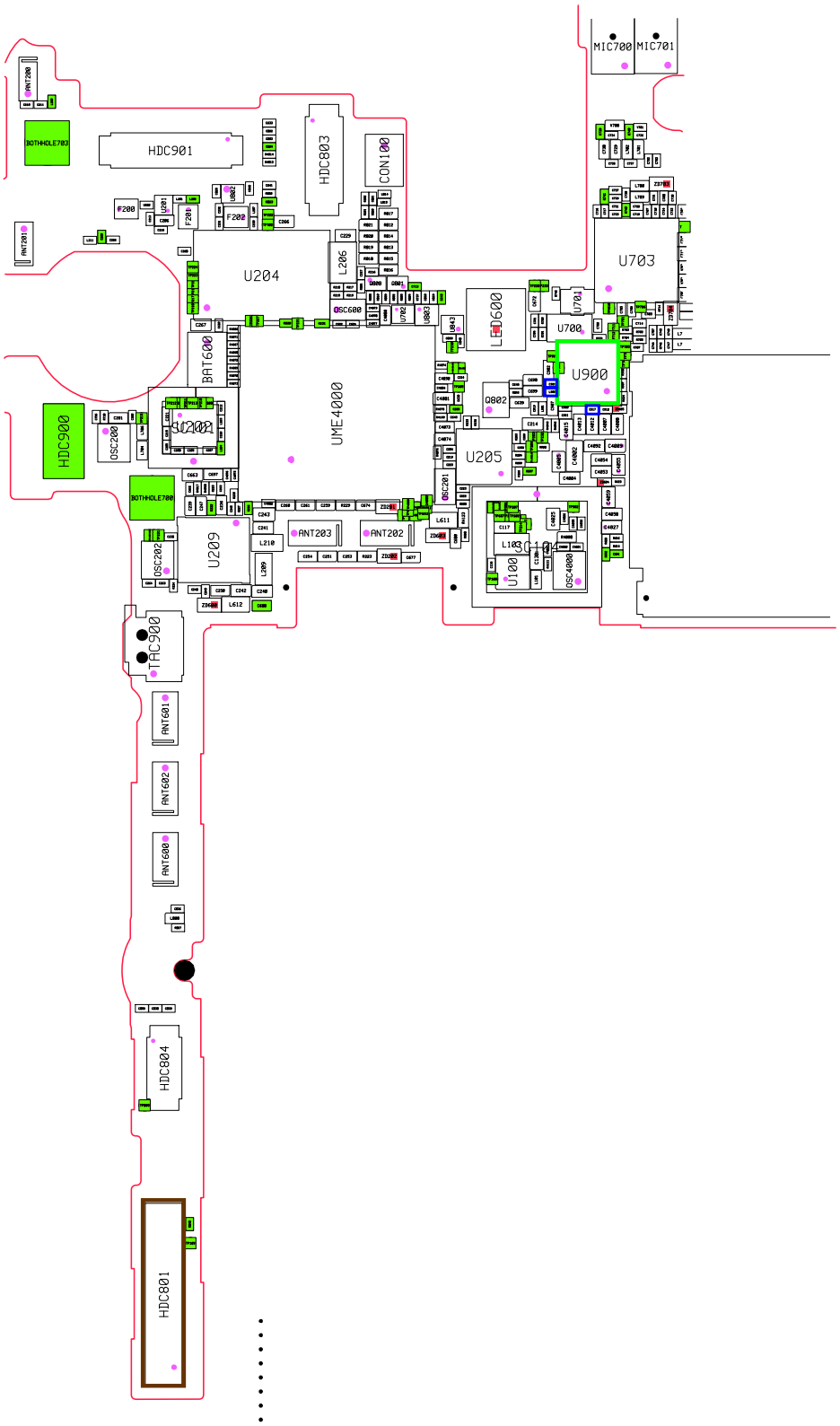

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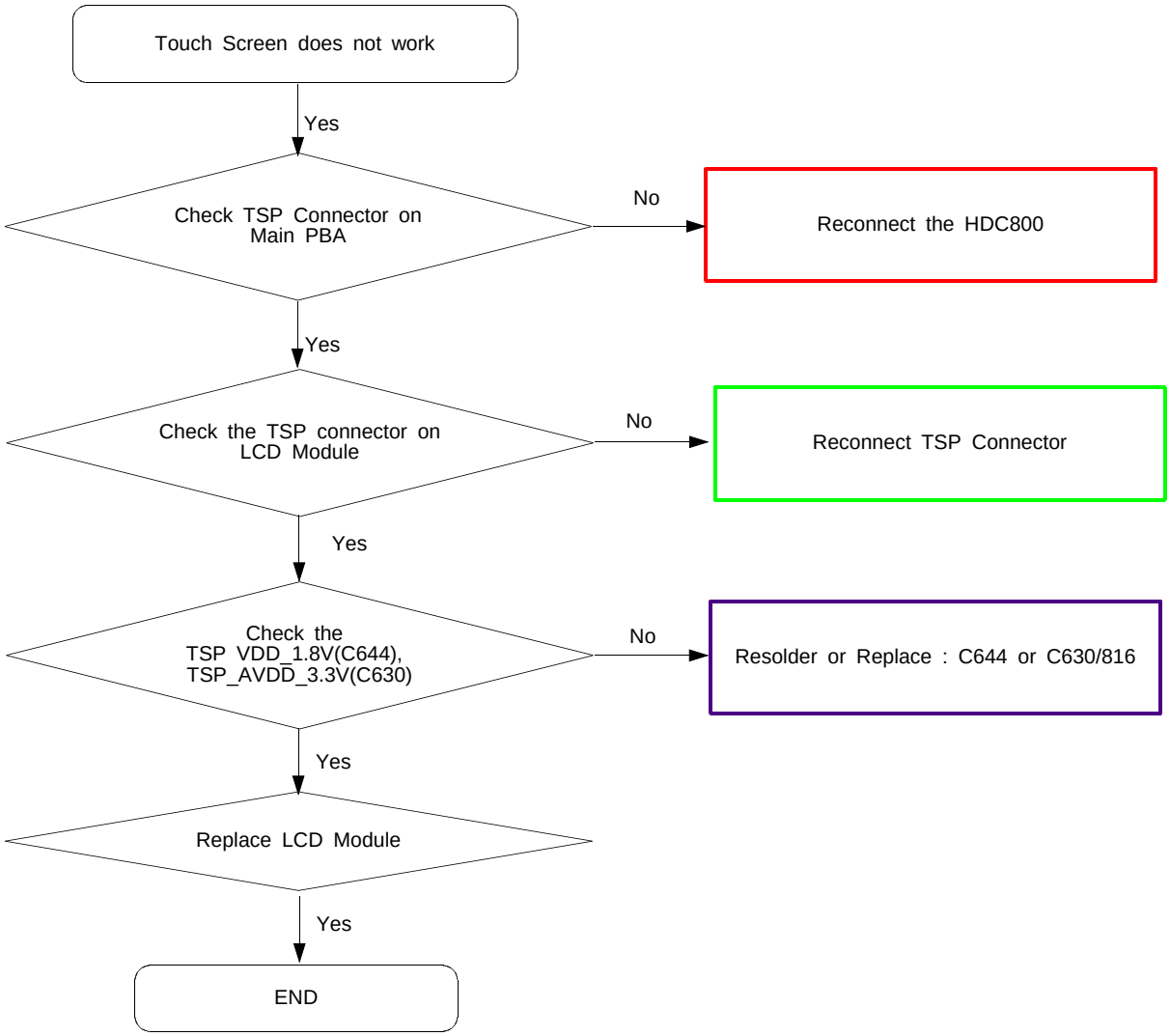
8-3-18. TSP



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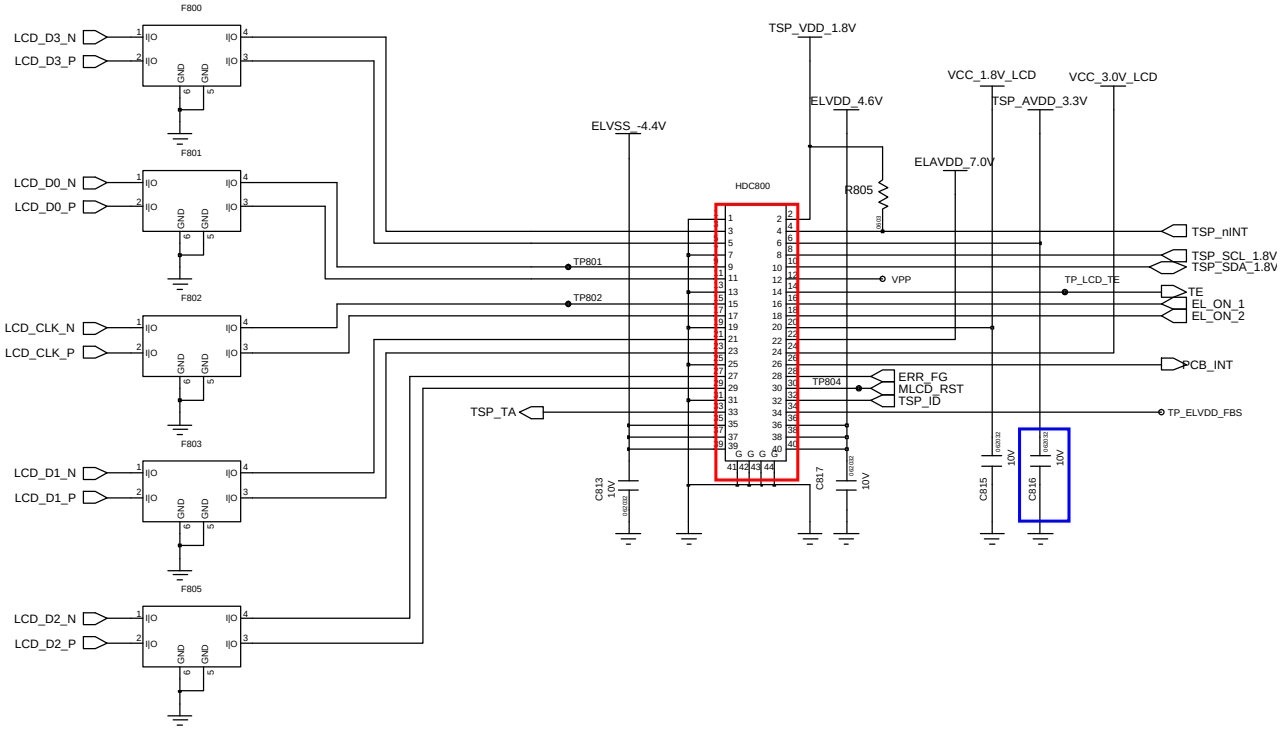

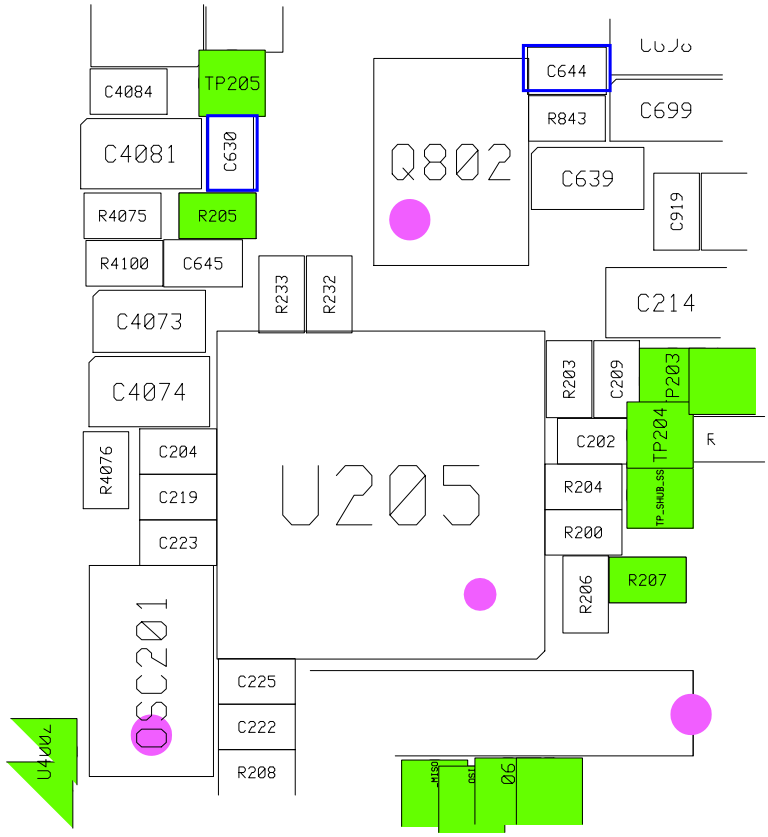

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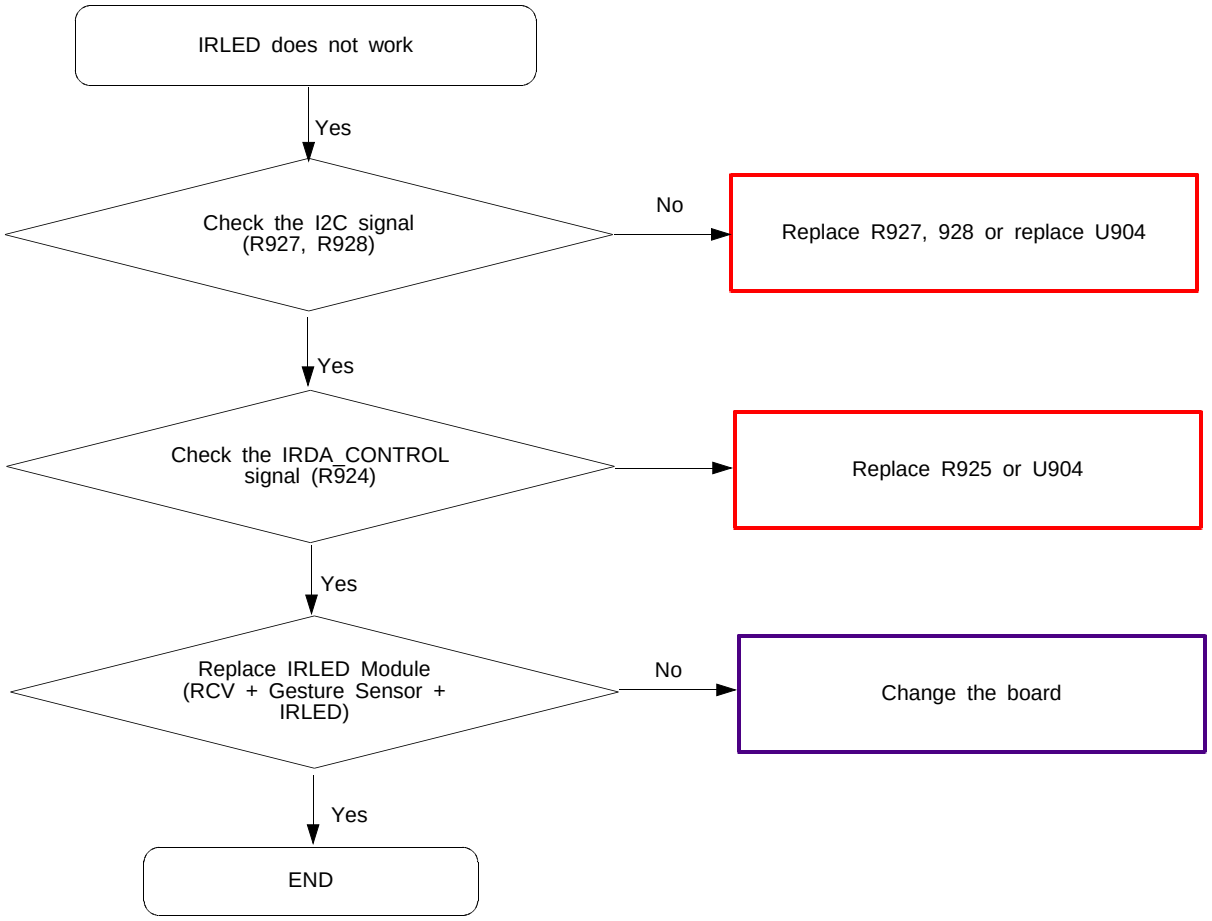
8-3-19. IRLED



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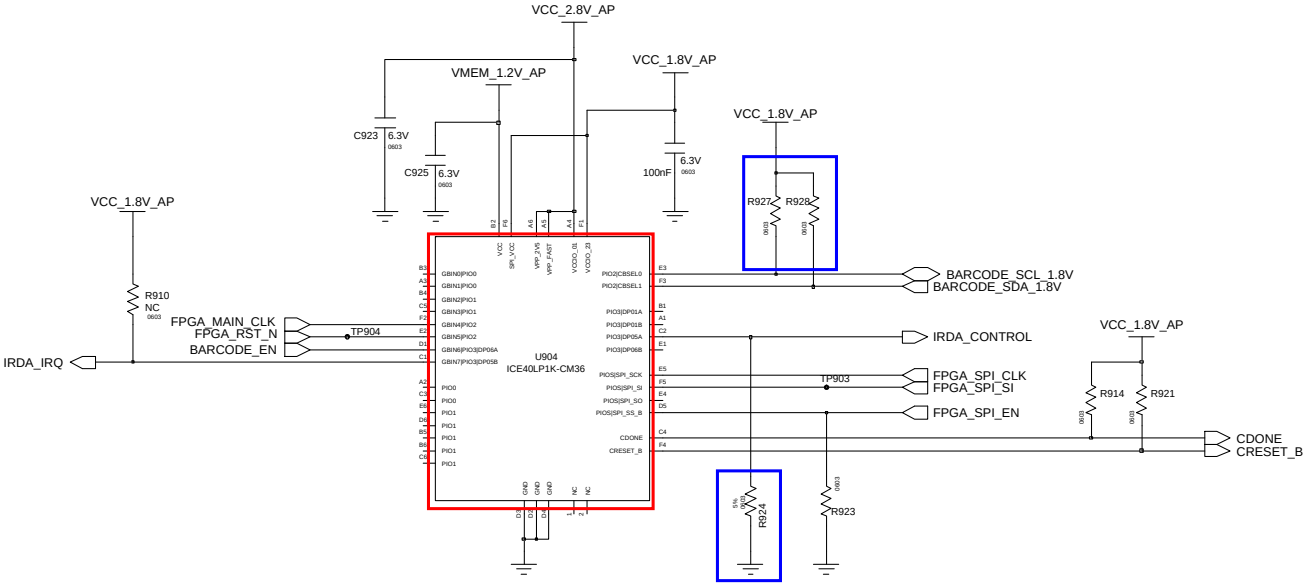

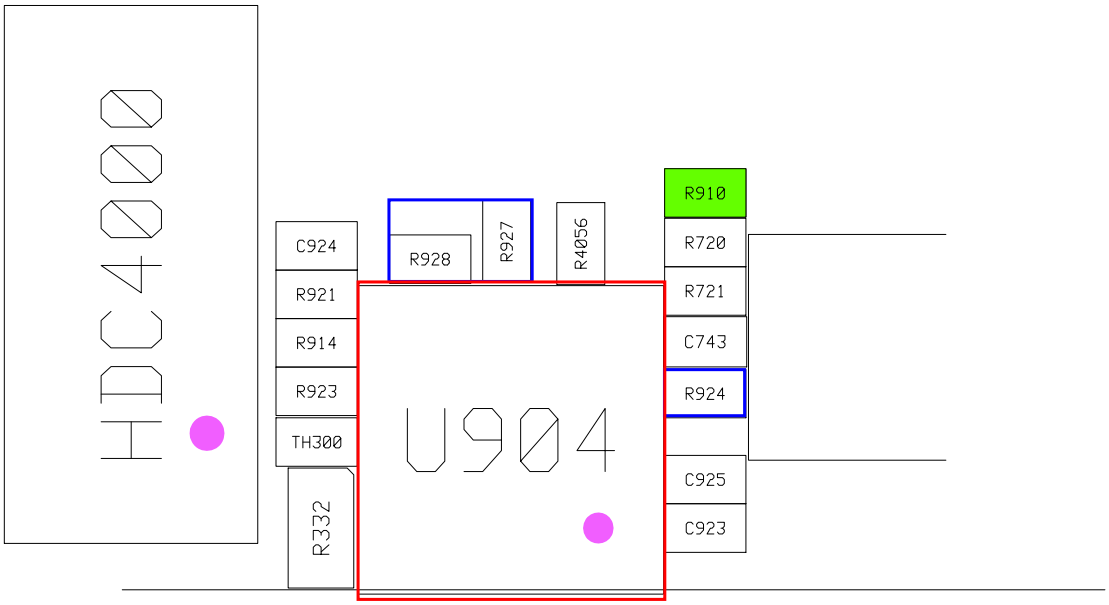

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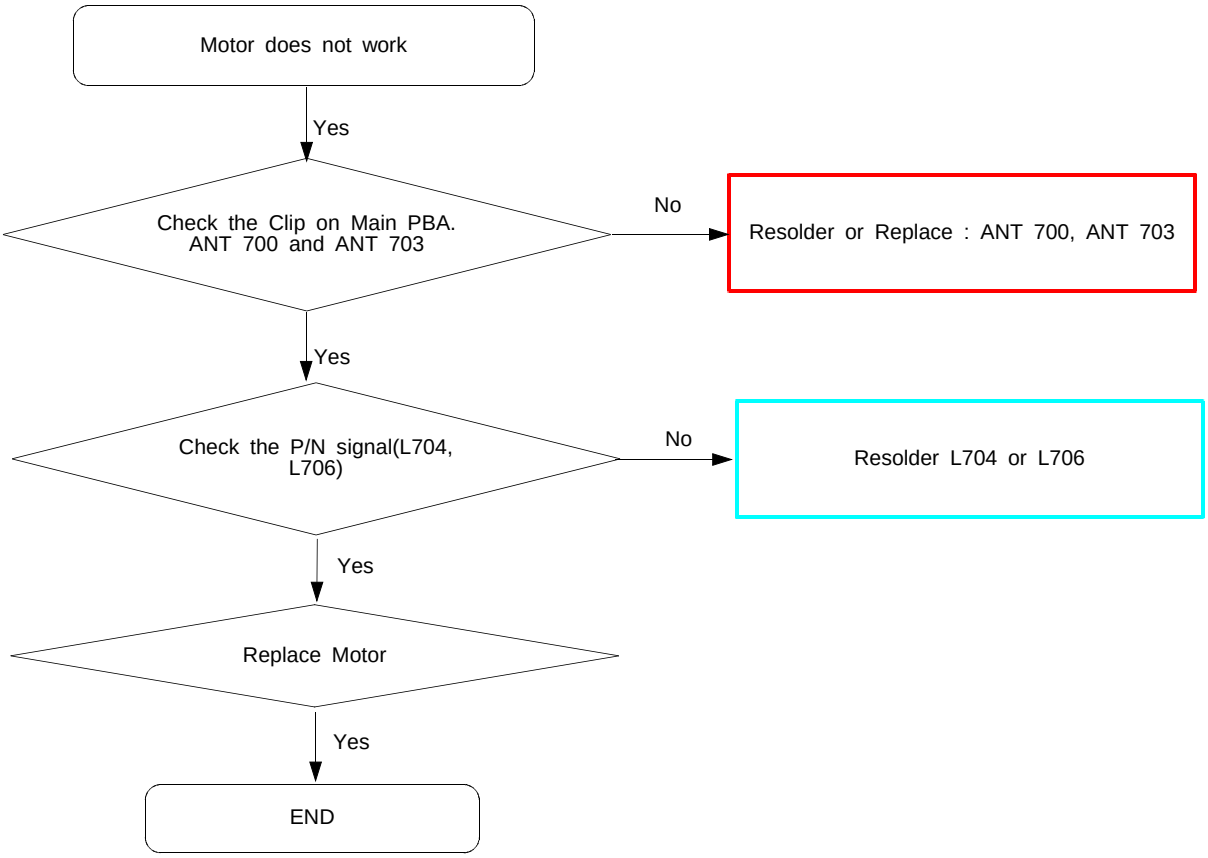
8-3-20. Motor



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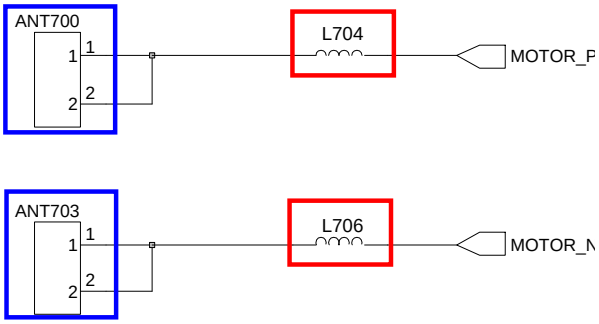

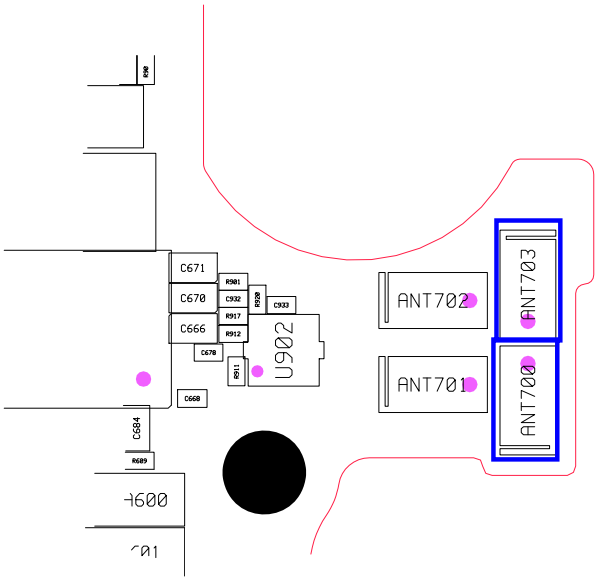

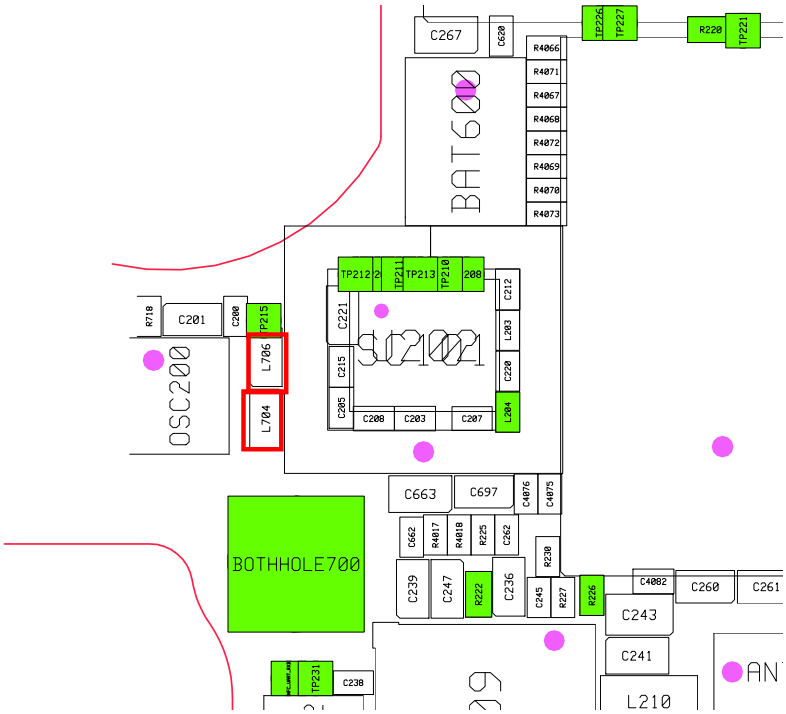

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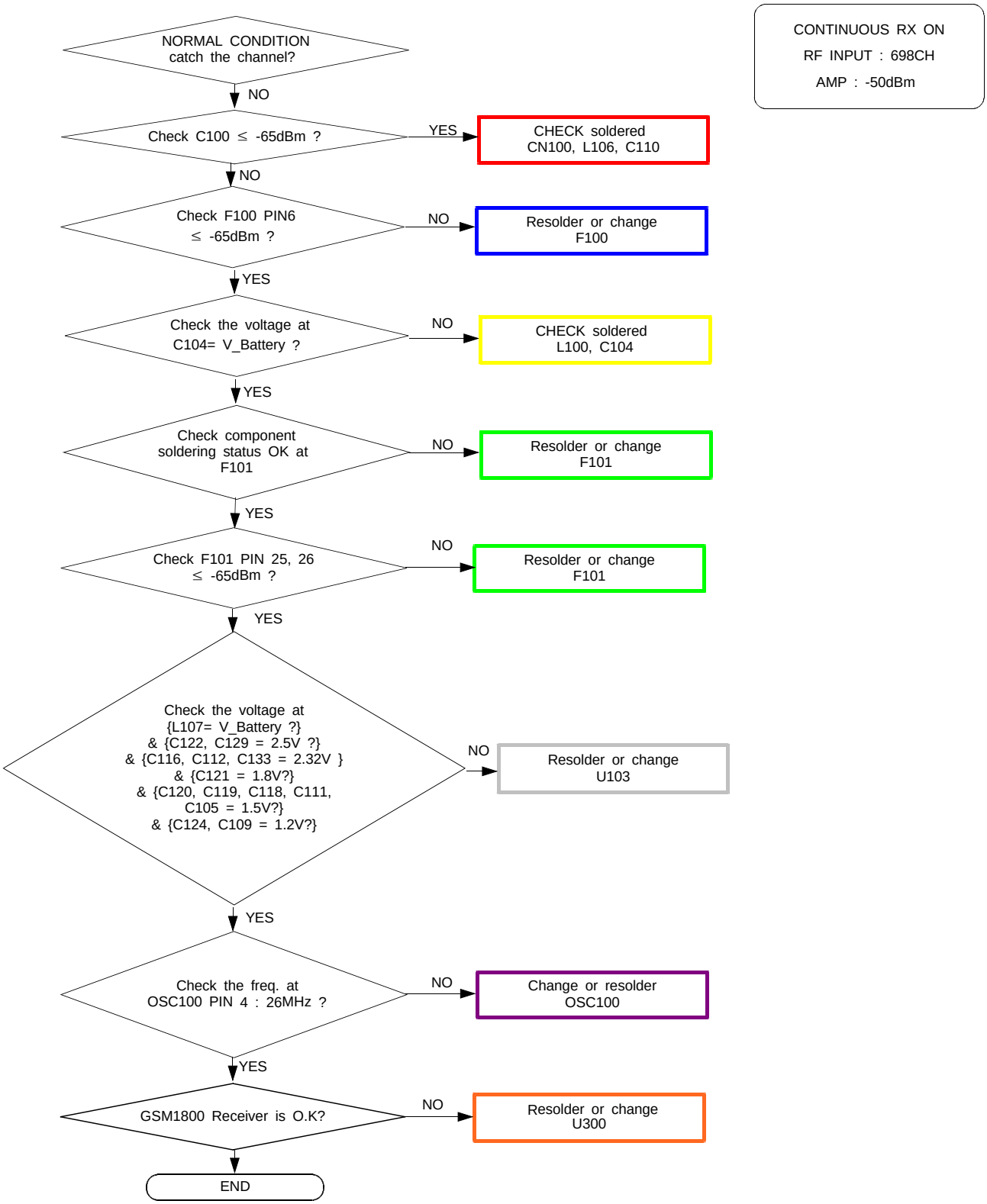
8-3-21. GSM1800 RX


CONTINUOUS RX ON
RF INPUT : 698CH
AMP : -50dBm
NORMAL CONDITION catch the channel?
NO
Check C100 ≤ -65dBm ?
YES
CHECK soldered CN100, L106, C110
NO
Check F100 PIN6 ≤ -65dBm ?
NO
Resolder or change F100
YES
Check the voltage at C104= V_Battery ?
NO
CHECK soldered L100, C104
YES
Check component soldering status OK at F101
NO
Resolder or change F101
YES
Check F101 PIN 25, 26 ≤ -65dBm ?
NO
Resolder or change F101
YES
Check the voltage at {L107= V_Battery ?} & {C122, C129 = 2.5V ?} & {C116, C112, C133 = 2.32V } & {C121 = 1.8V?} & {C120, C119, C118, C111, C105 = 1.5V?} & {C124, C109 = 1.2V?}
NO
Resolder or change U103
YES
Check the freq. at OSC100 PIN 4 : 26MHz ?
NO
Change or resolder OSC100
YES
GSM1800 Receiver is O.K?
NO
Resolder or change U300
END

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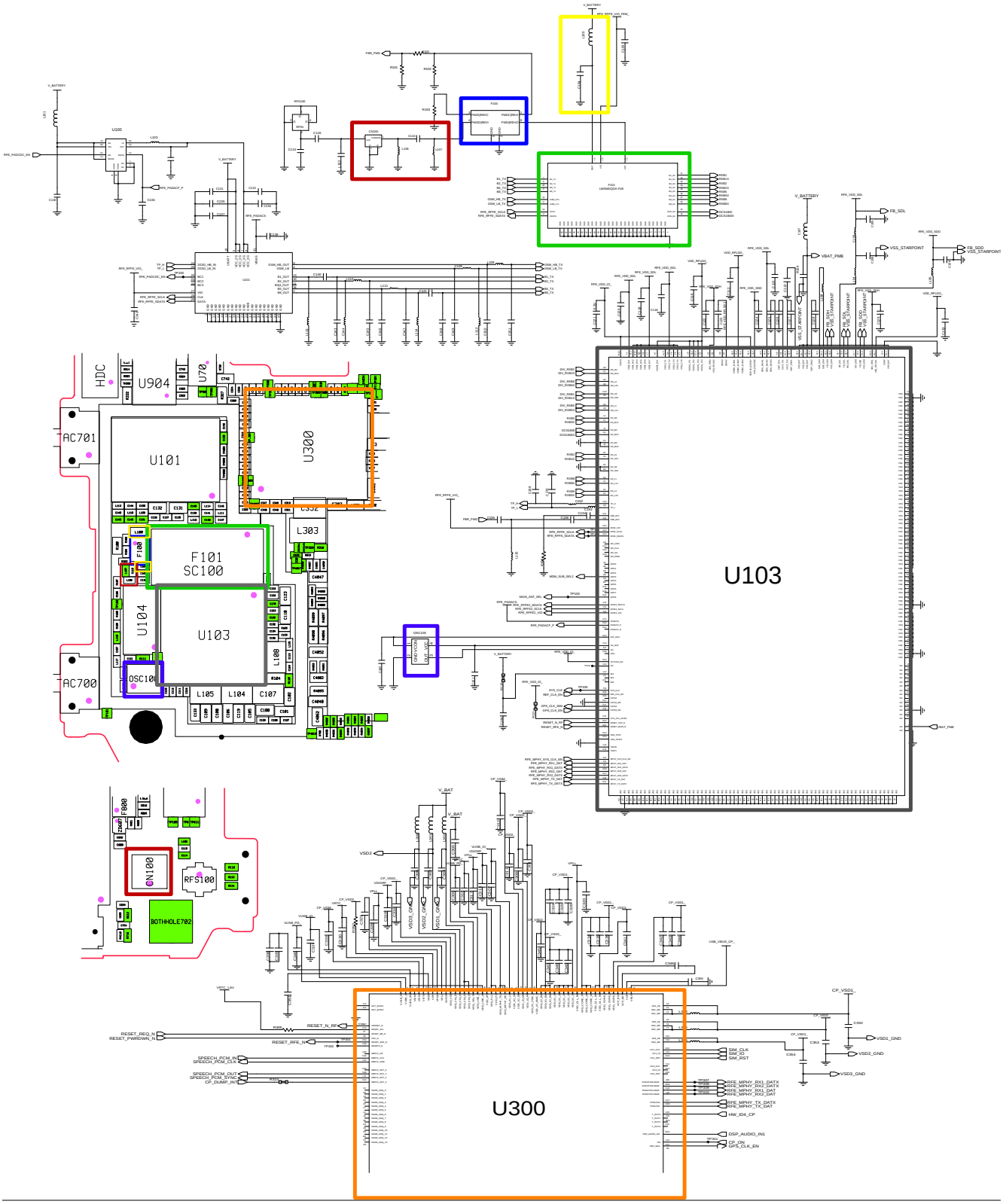

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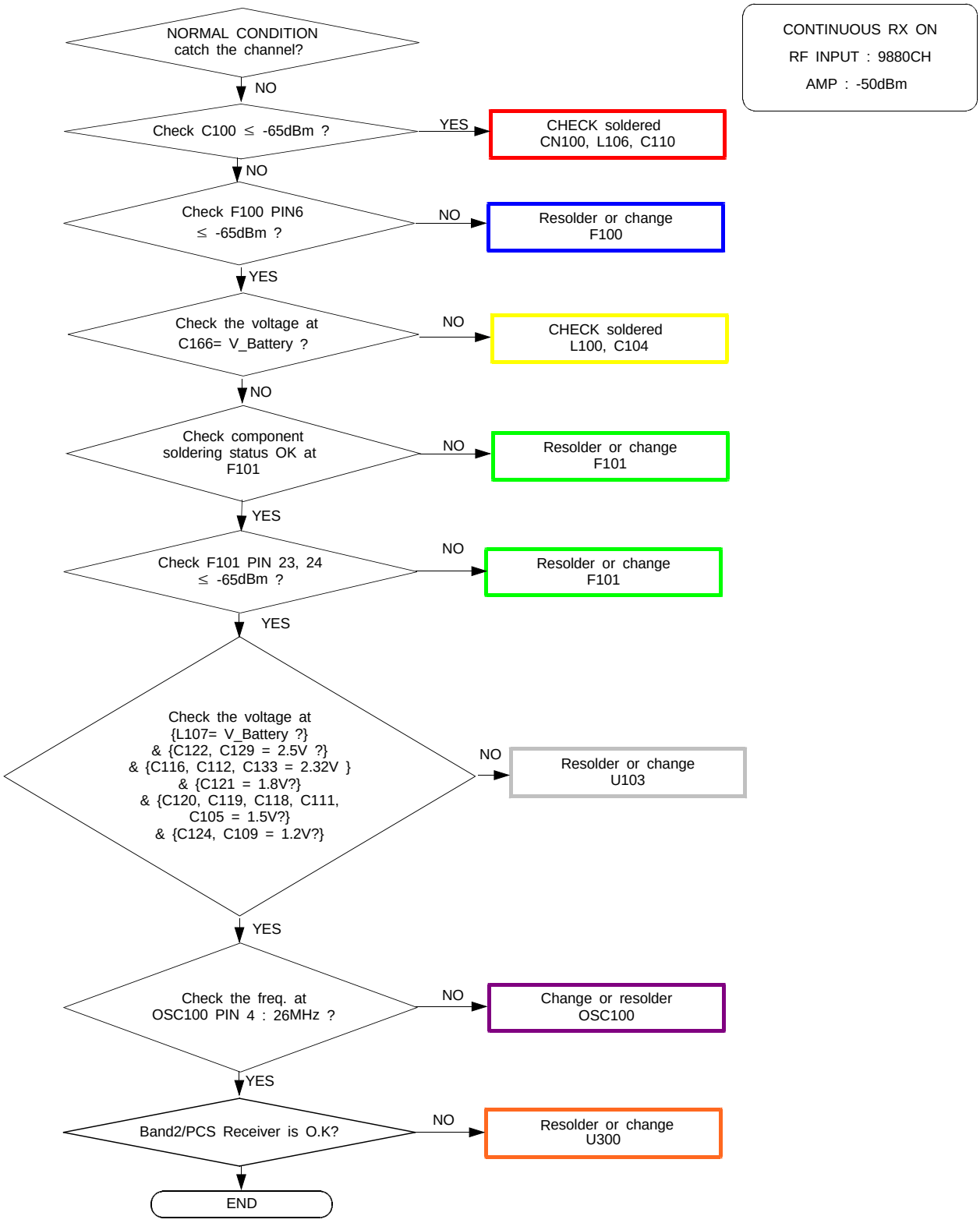
8-3-22. WCDMA Band1 RX


CONTINUOUS RX ON
RF INPUT : 9880CH
AMP : -50dBm
NORMAL CONDITION catch the channel?
NO
Check C100 ≤ -65dBm ?
YES
CHECK soldered CN100, L106, C110
NO
Check F100 PIN6 ≤ -65dBm ?
NO
Resolder or change F100
YES
Check the voltage at C166= V_Battery ?
NO
CHECK soldered L100, C104
NO
Check component soldering status OK at F101
NO
Resolder or change F101
YES
Check F101 PIN 23, 24 ≤ -65dBm ?
NO
Resolder or change F101
YES
Check the voltage at {L107= V_Battery ?} & {C122, C129 = 2.5V ?} & {C116, C112, C133 = 2.32V } & {C121 = 1.8V?} & {C120, C119, C118, C111, C105 = 1.5V?} & {C124, C109 = 1.2V?}
NO
Resolder or change U103
YES
Check the freq. at OSC100 PIN 4 : 26MHz ?
NO
Change or resolder OSC100
YES
Band2/PCS Receiver is O.K?
NO
Resolder or change U300
END

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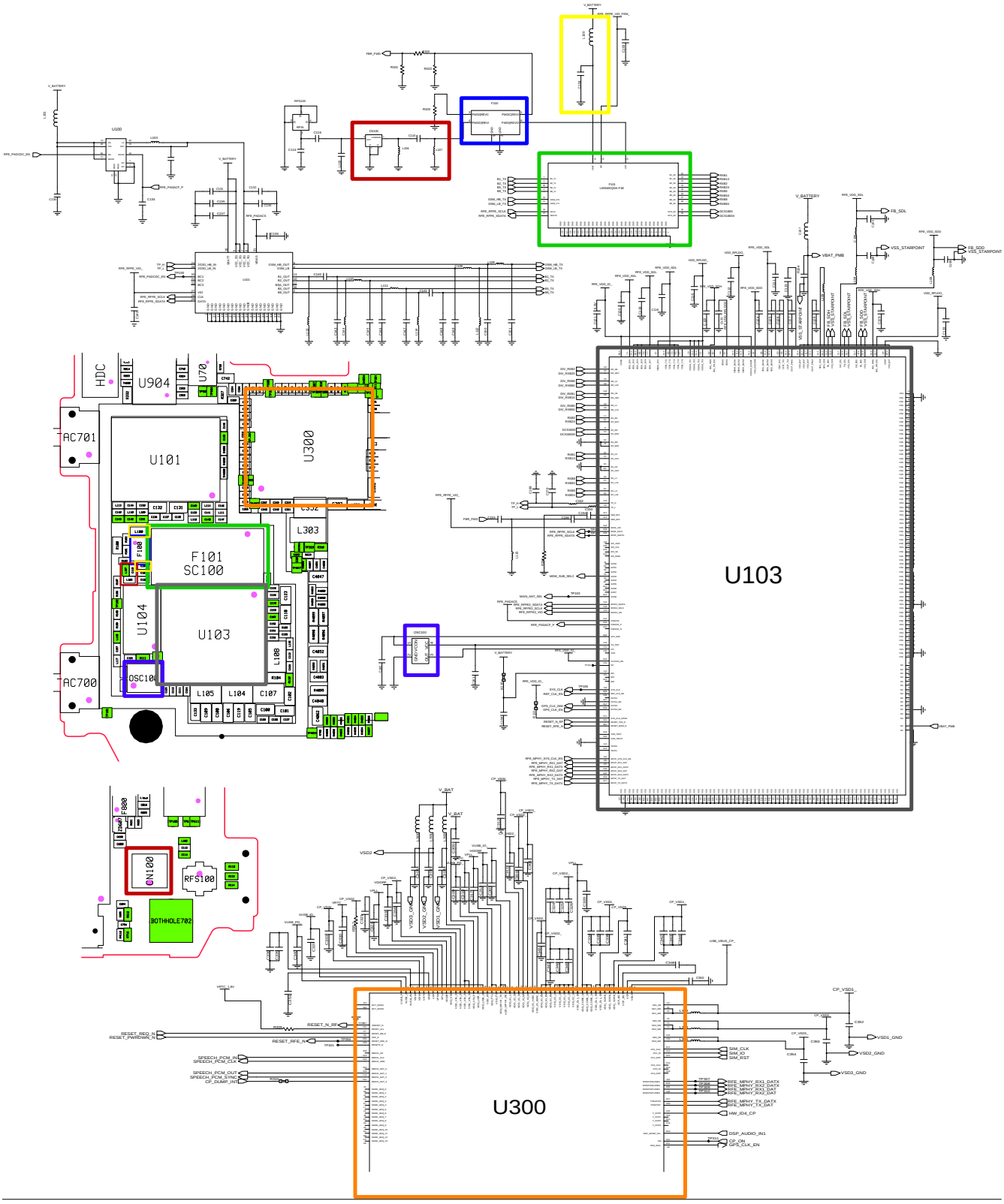

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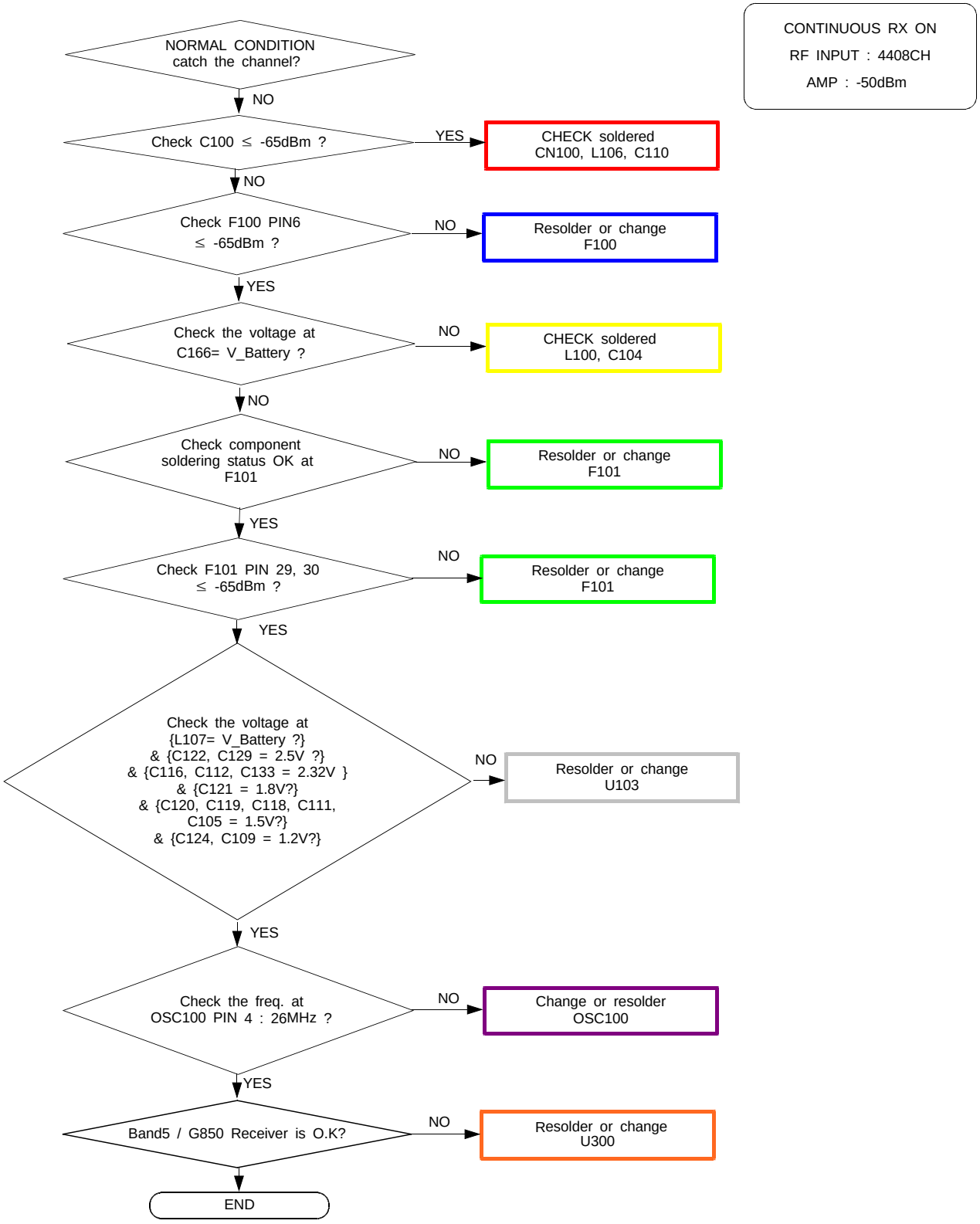
8-3-23. WCDMA Band5 / GSM 850 RX


CONTINUOUS RX ON
RF INPUT : 4408CH
AMP : -50dBm
NORMAL CONDITION catch the channel?
NO
Check C100 ≤ -65dBm ?
YES
CHECK soldered CN100, L106, C110
NO
Check F100 PIN6 ≤ -65dBm ?
NO
Resolder or change F100
YES
Check the voltage at C166= V_Battery ?
NO
CHECK soldered L100, C104
NO
Check component soldering status OK at F101
NO
Resolder or change F101
YES
Check F101 PIN 29, 30 ≤ -65dBm ?
NO
Resolder or change F101
YES
Check the voltage at {L107= V_Battery ?} & {C122, C129 = 2.5V ?} & {C116, C112, C133 = 2.32V } & {C121 = 1.8V?} & {C120, C119, C118, C111, C105 = 1.5V?} & {C124, C109 = 1.2V?}
NO
Resolder or change U103
YES
Check the freq. at OSC100 PIN 4 : 26MHz ?
NO
Change or resolder OSC100
YES
Band5 / G850 Receiver is O.K?
NO
Resolder or change U300
END

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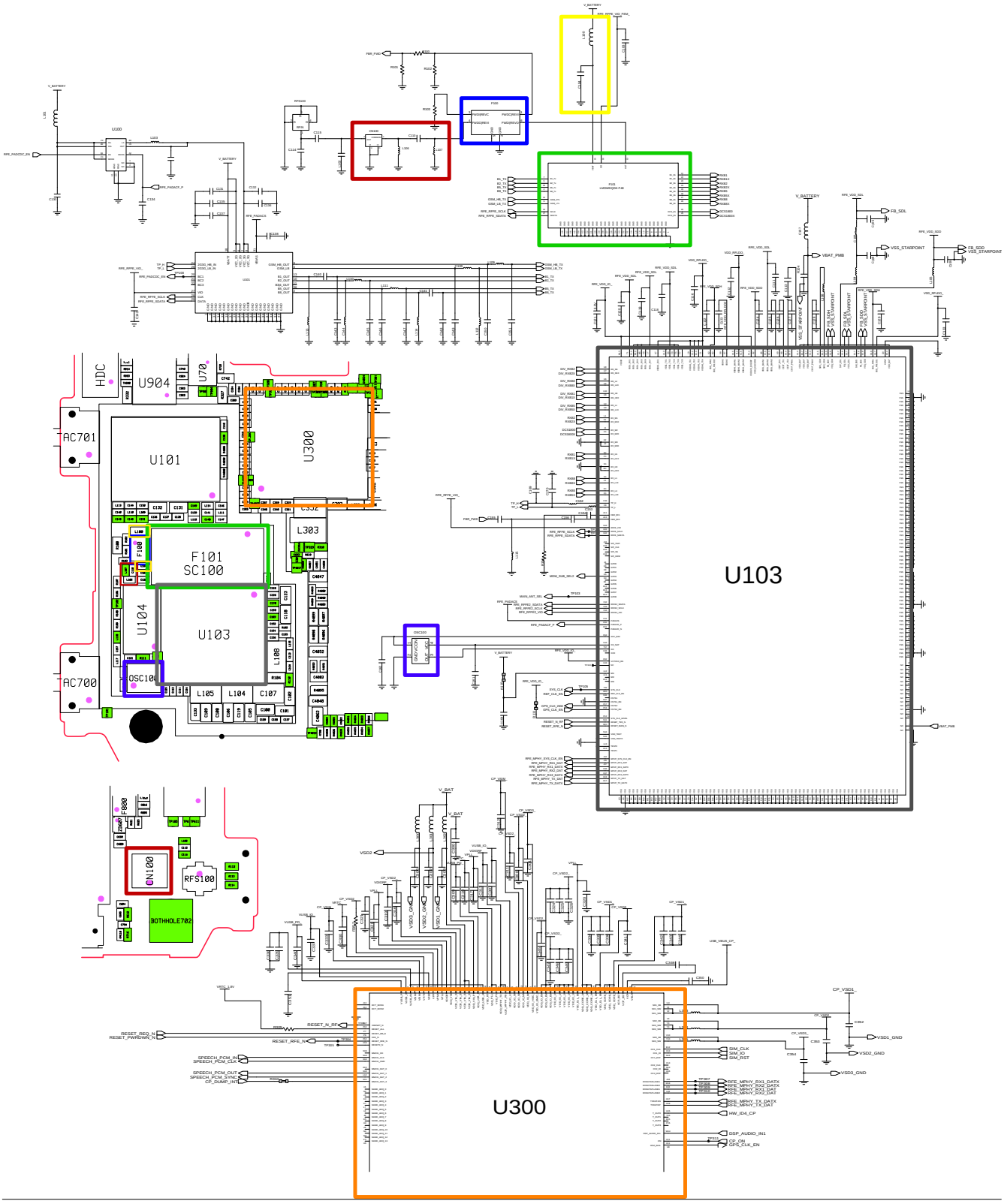

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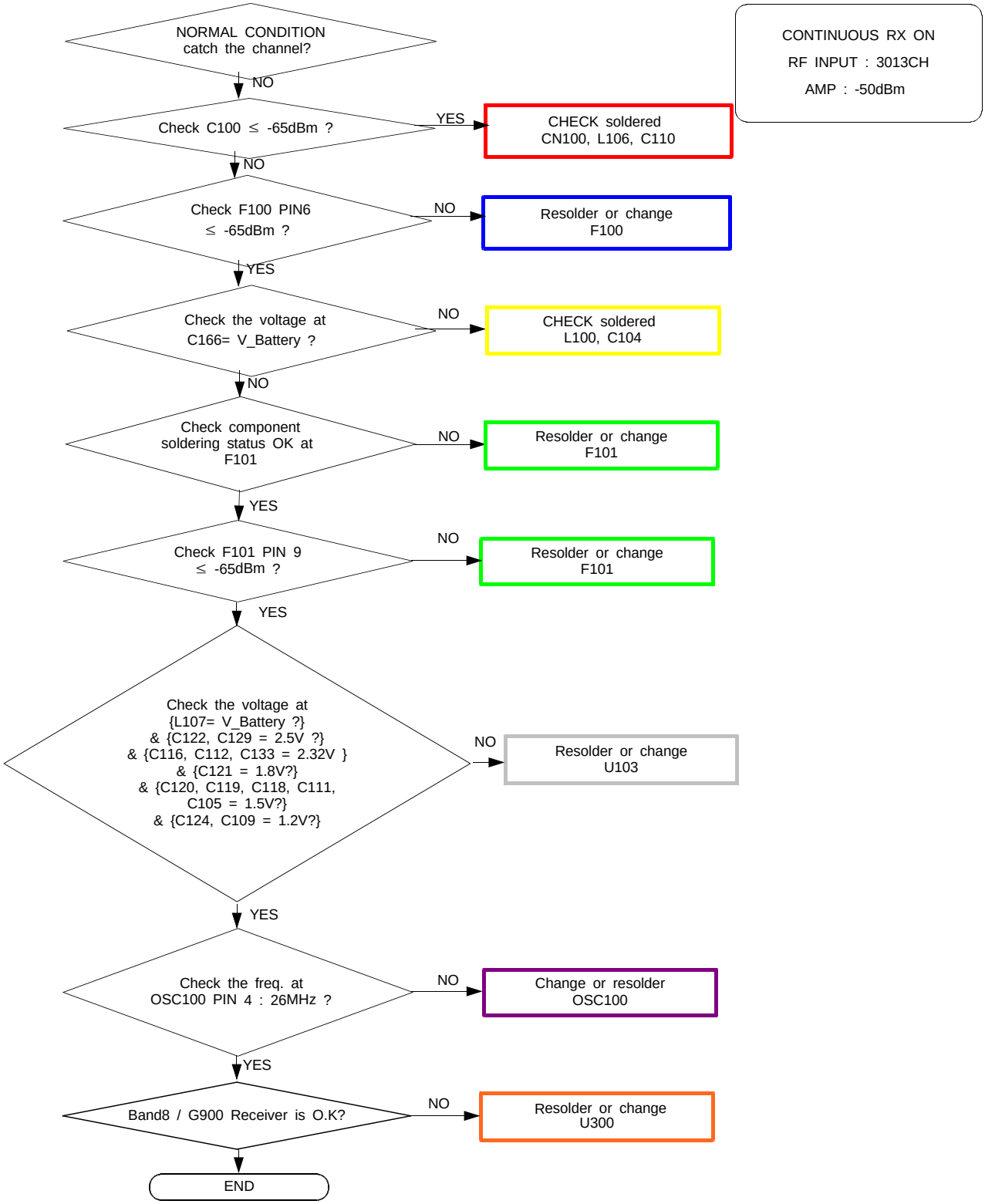
8-3-24. WCDMA Band8 / GSM900 RX



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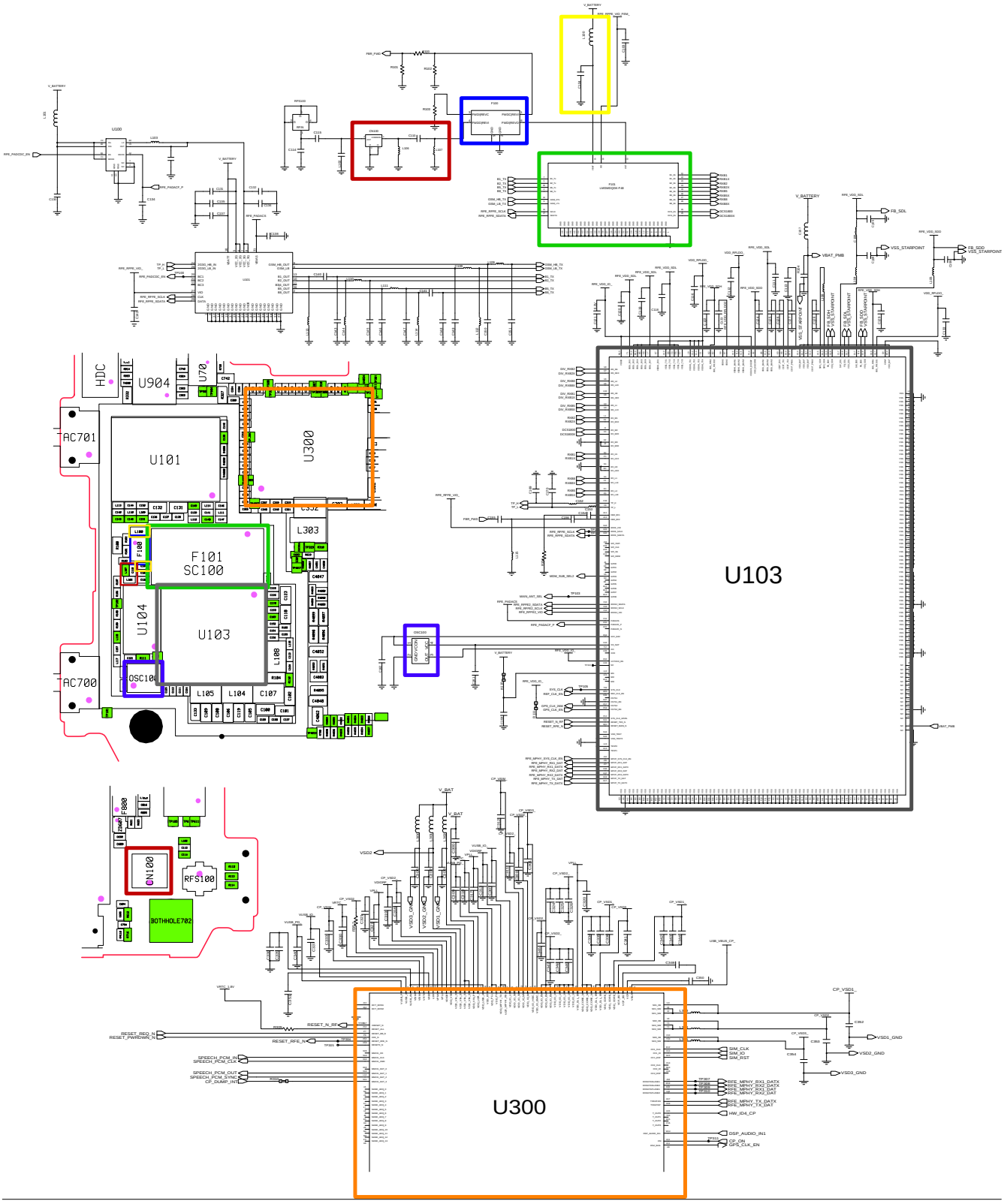

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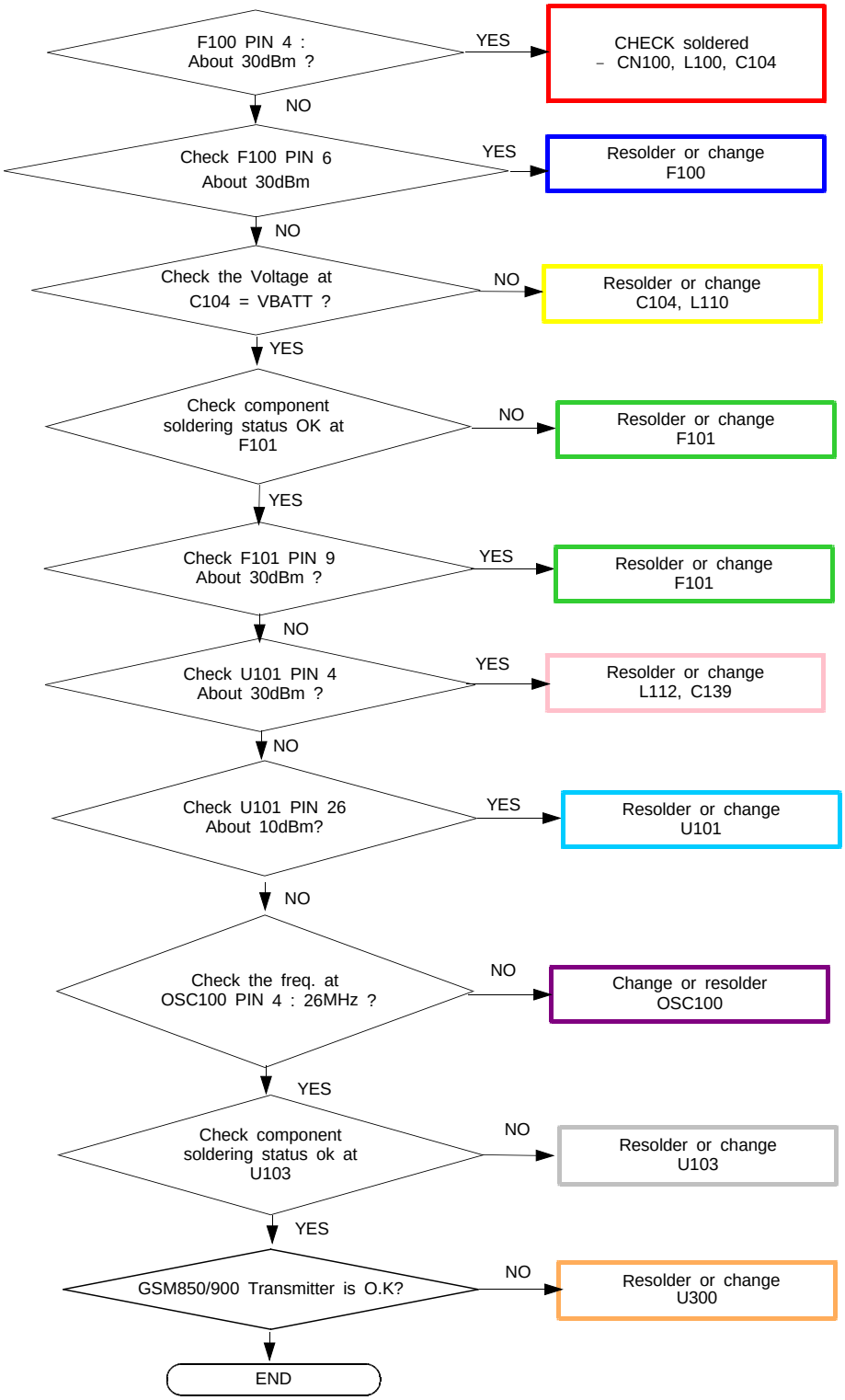
8-3-25. GSM850/GSM900 TX

CONTINUOUS TX ON CONDITION
TX POWER IDX1 APPLIED
GSM850 CH : 190
GSM900 CH : 62
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV. : 10dBm
ATT. : 20dB



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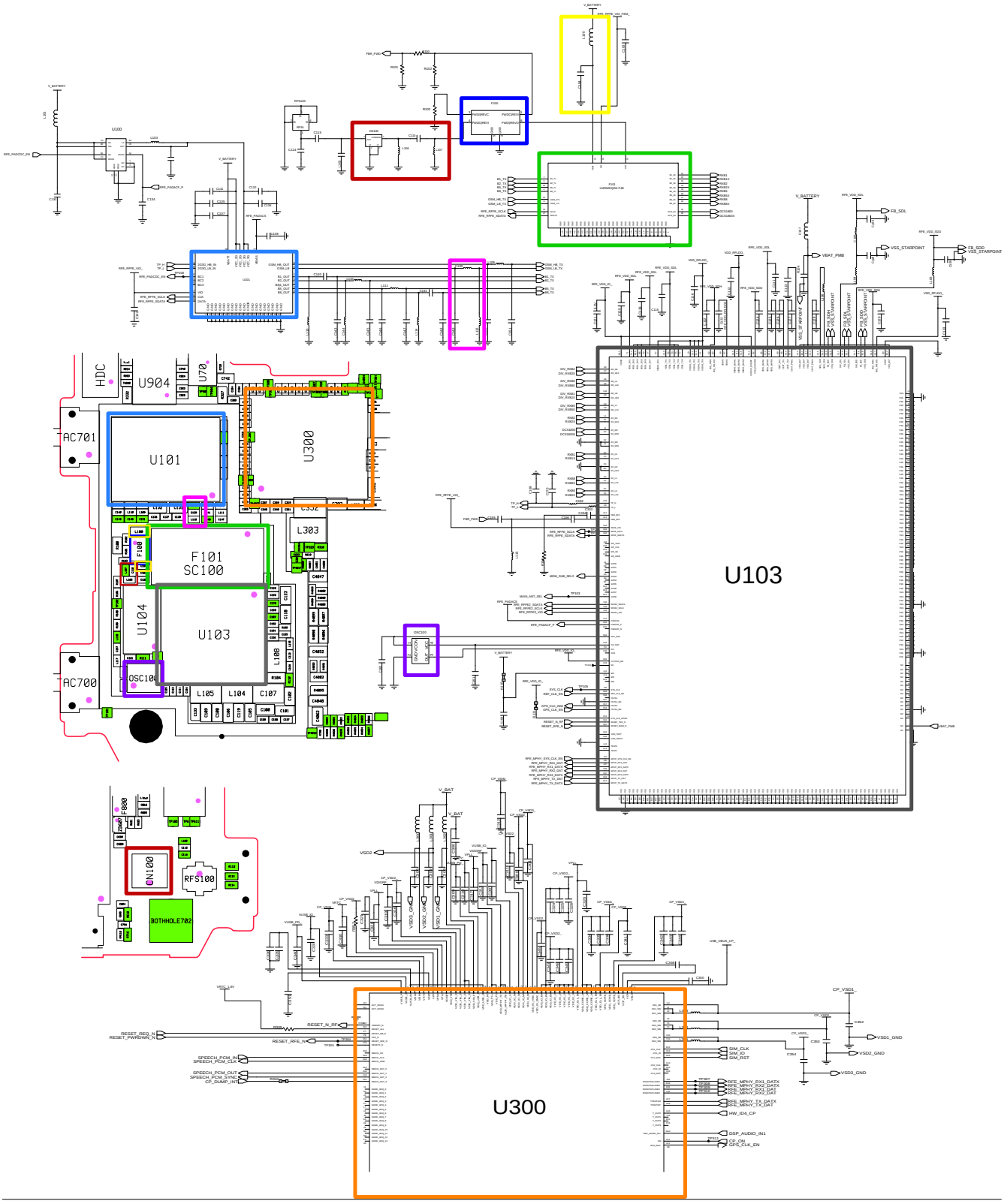

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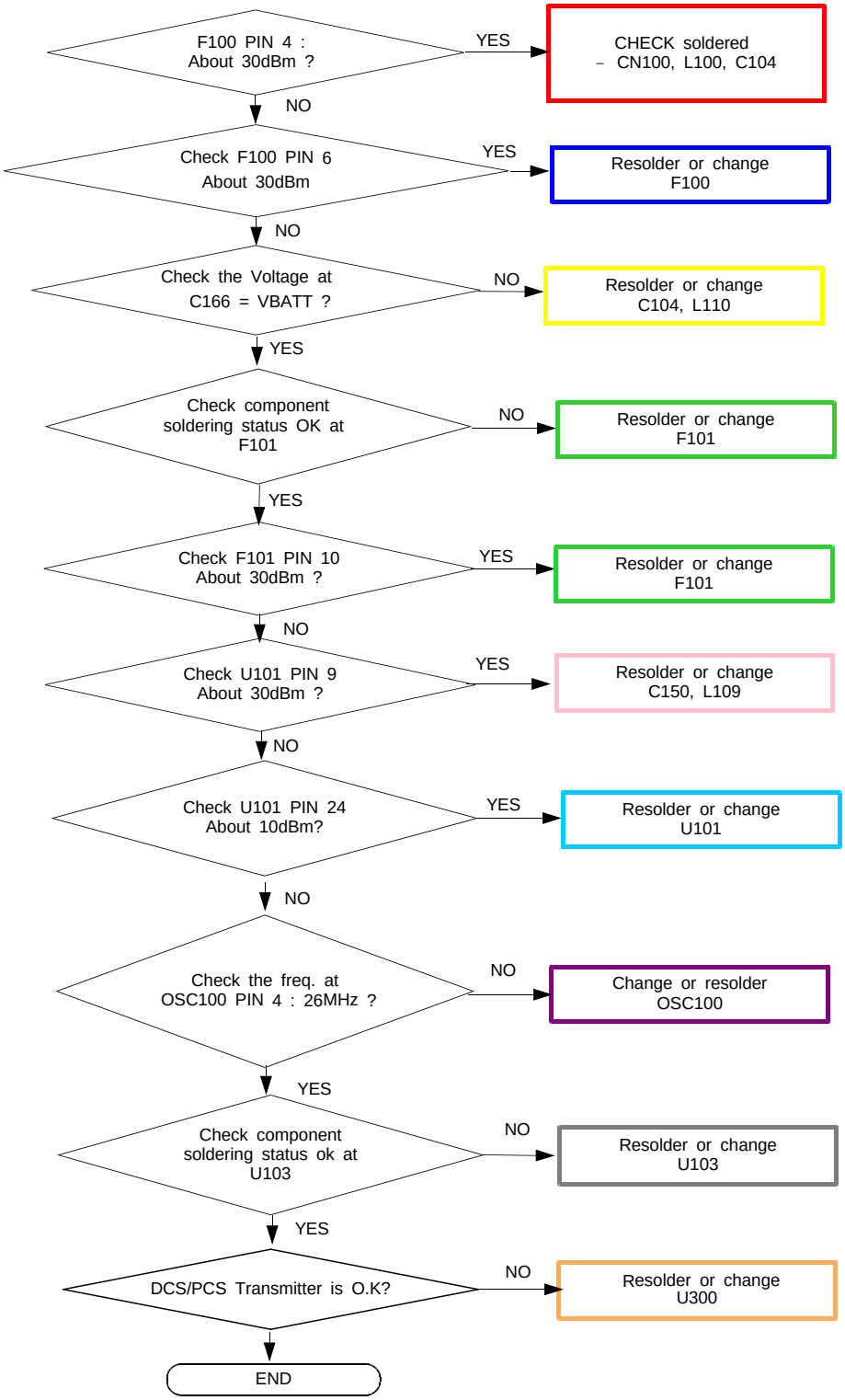
8-3-26. DCS/PCS TX

CONTINUOUS TX ON CONDITION
TX POWER IDX1 APPLIED
DCS CH : 685
PCS CH : 661
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV. : 10dBm
ATT. : 20dB



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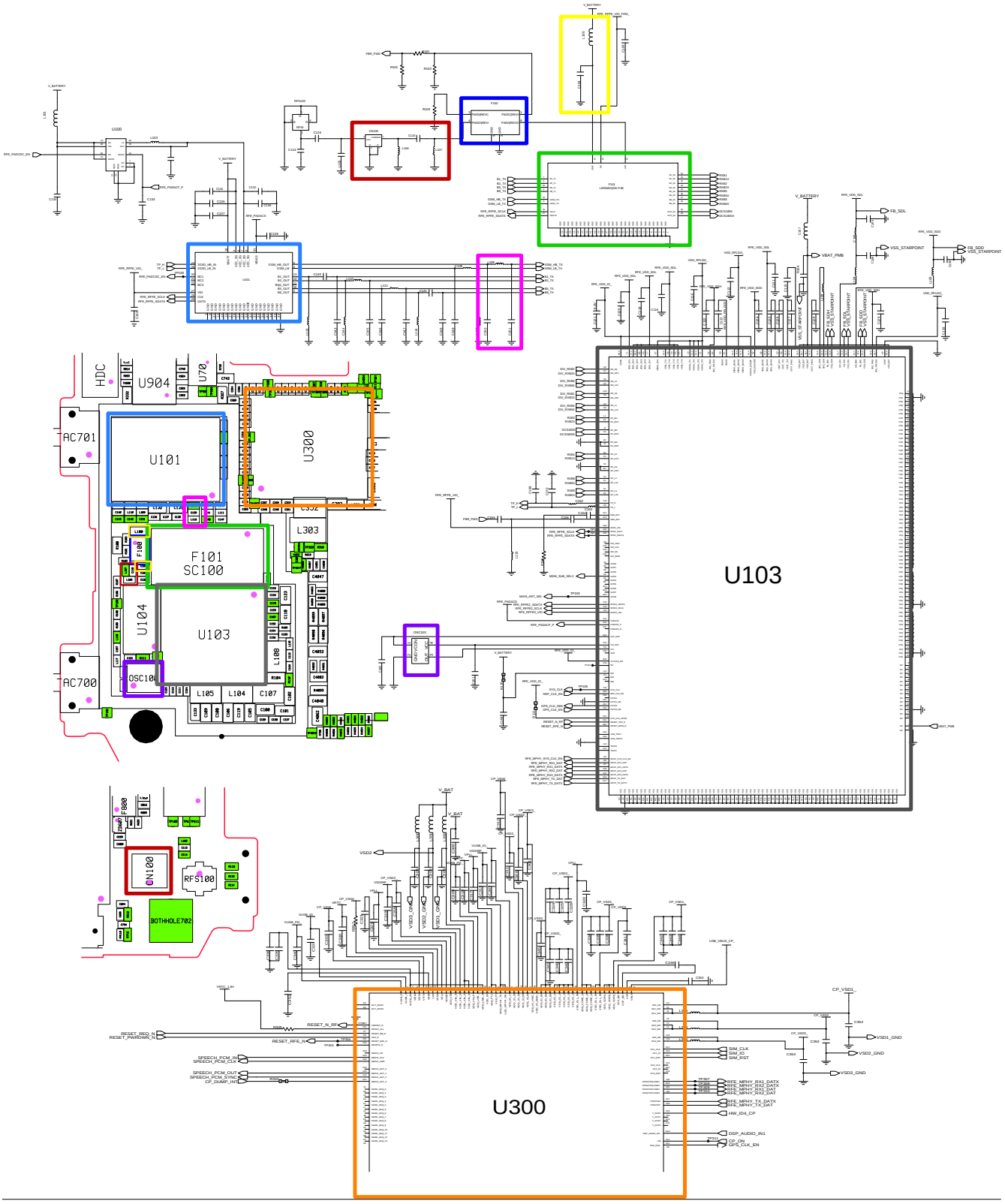

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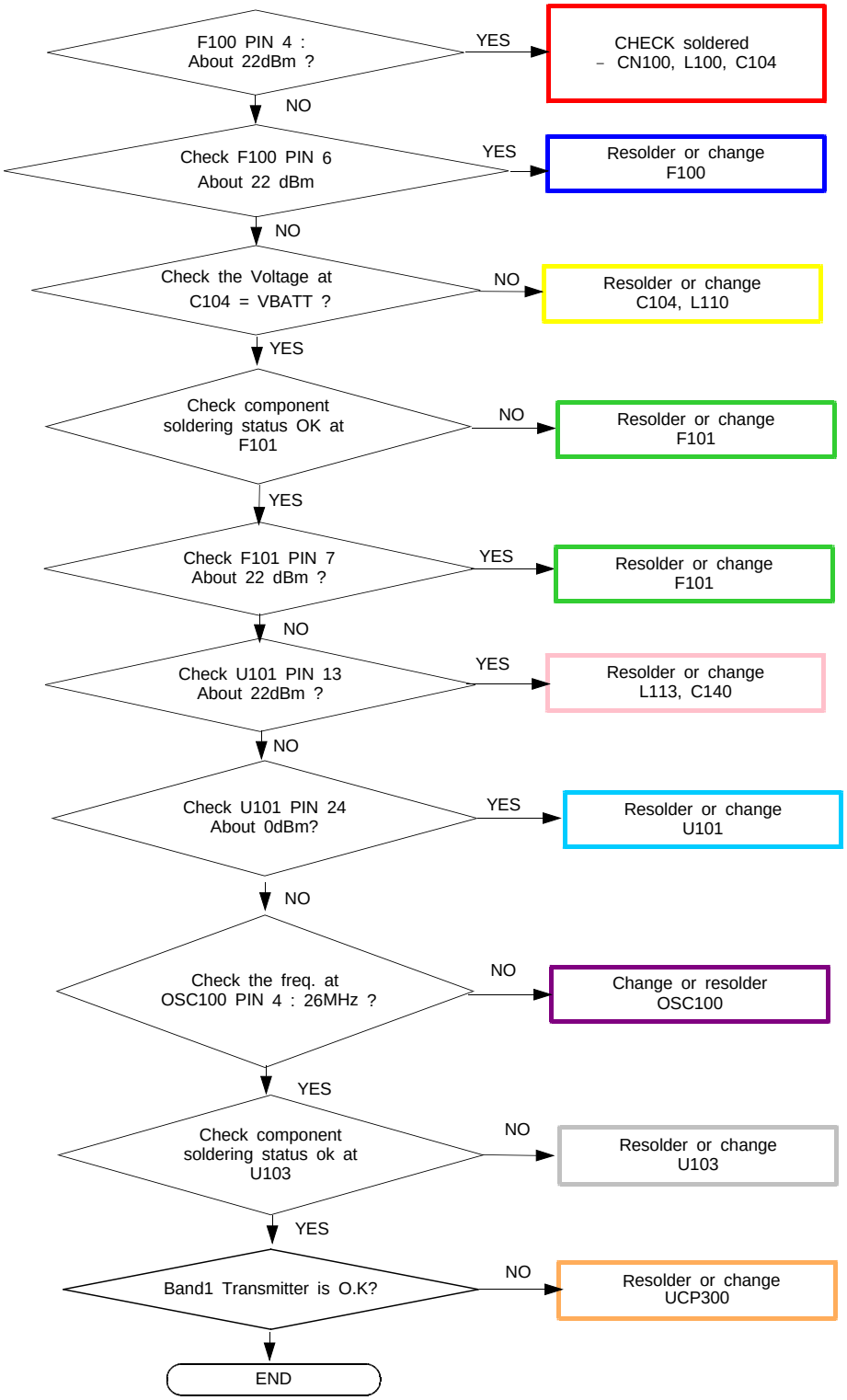
8-3-27. WCDMA BAND1 TX

CONTINUOUS TX ON CONDITION
TX POWER DAC:14500 CODE APPLIED
WCDMA Band1 CH : 20000
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV. : 10dBm
ATT. : 20dB



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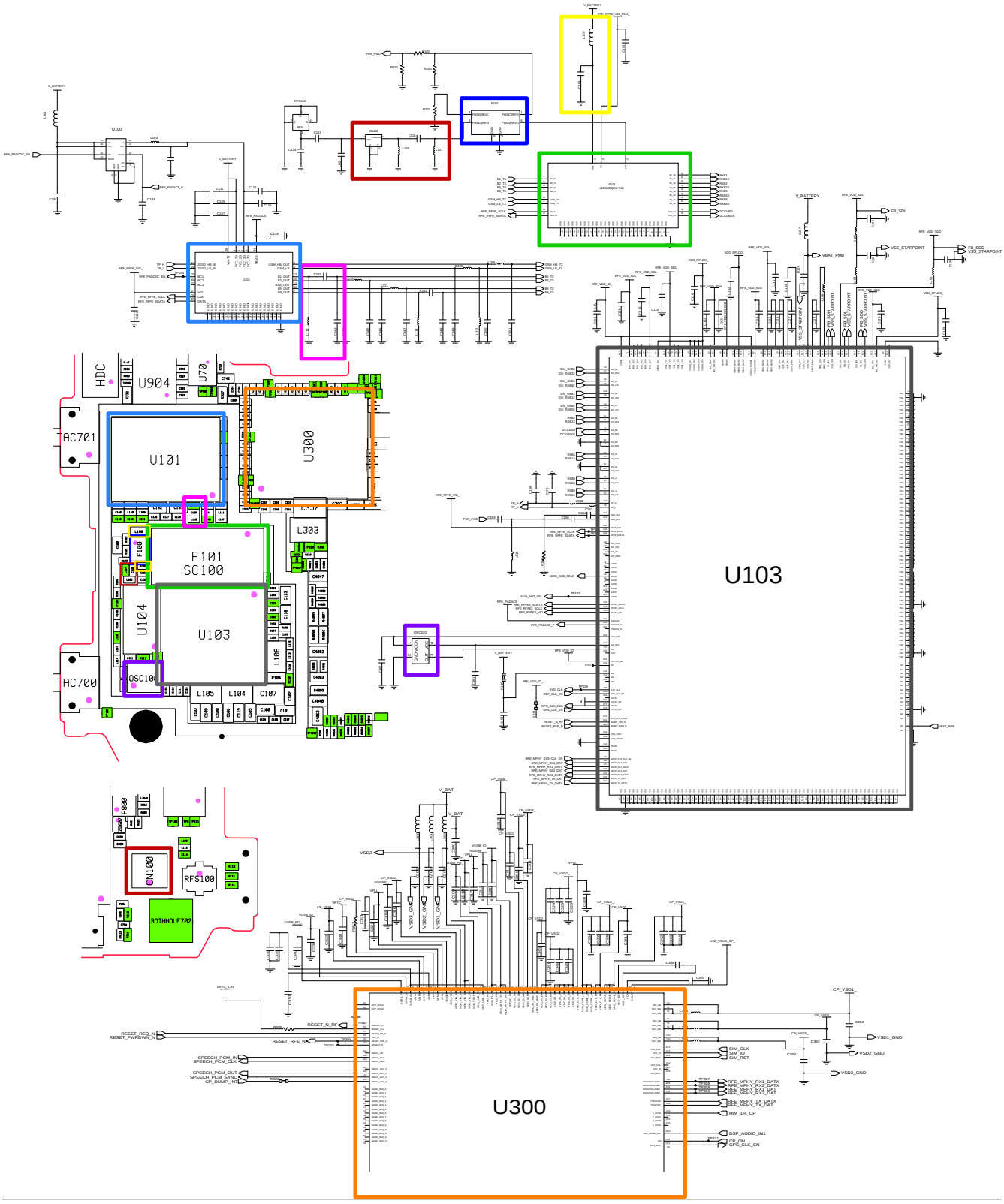

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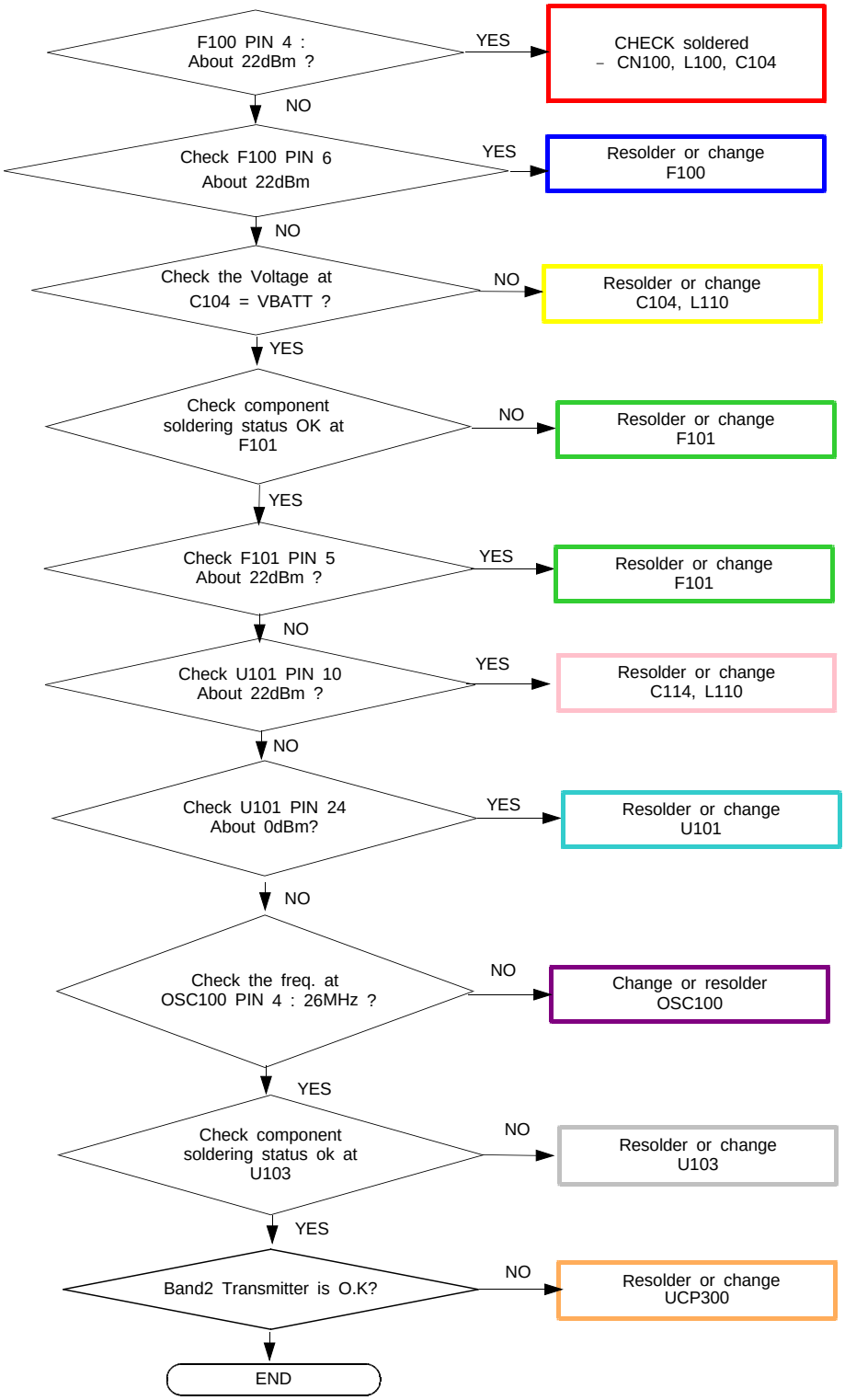
8-3-28. WCDMA BAND2 TX

CONTINUOUS TX ON CONDITION
TX POWER DAC:23000 CODE APPLIED
WCDMA Band2 CH : 9880
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV. : 10dBm
ATT. : 20dB



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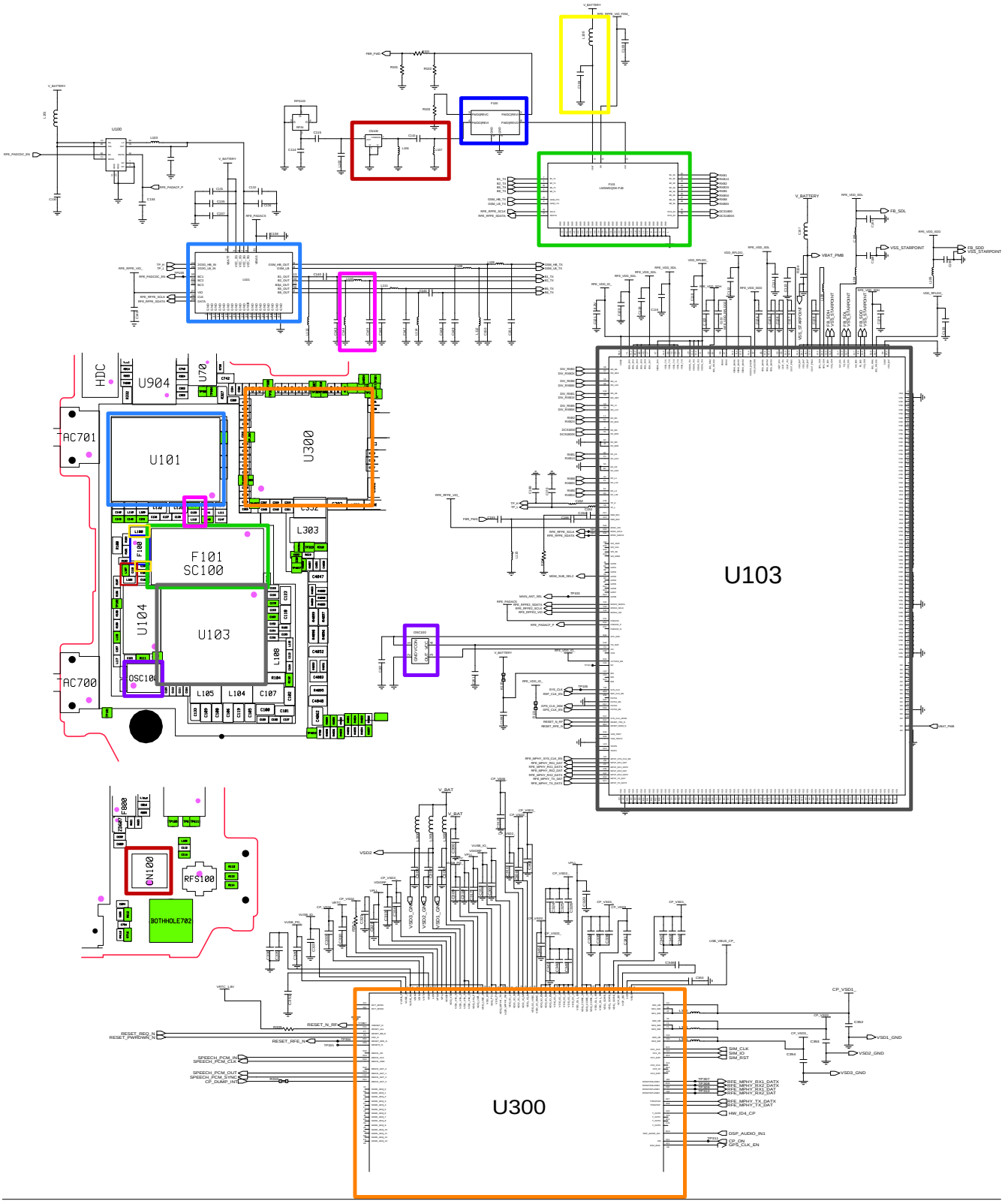

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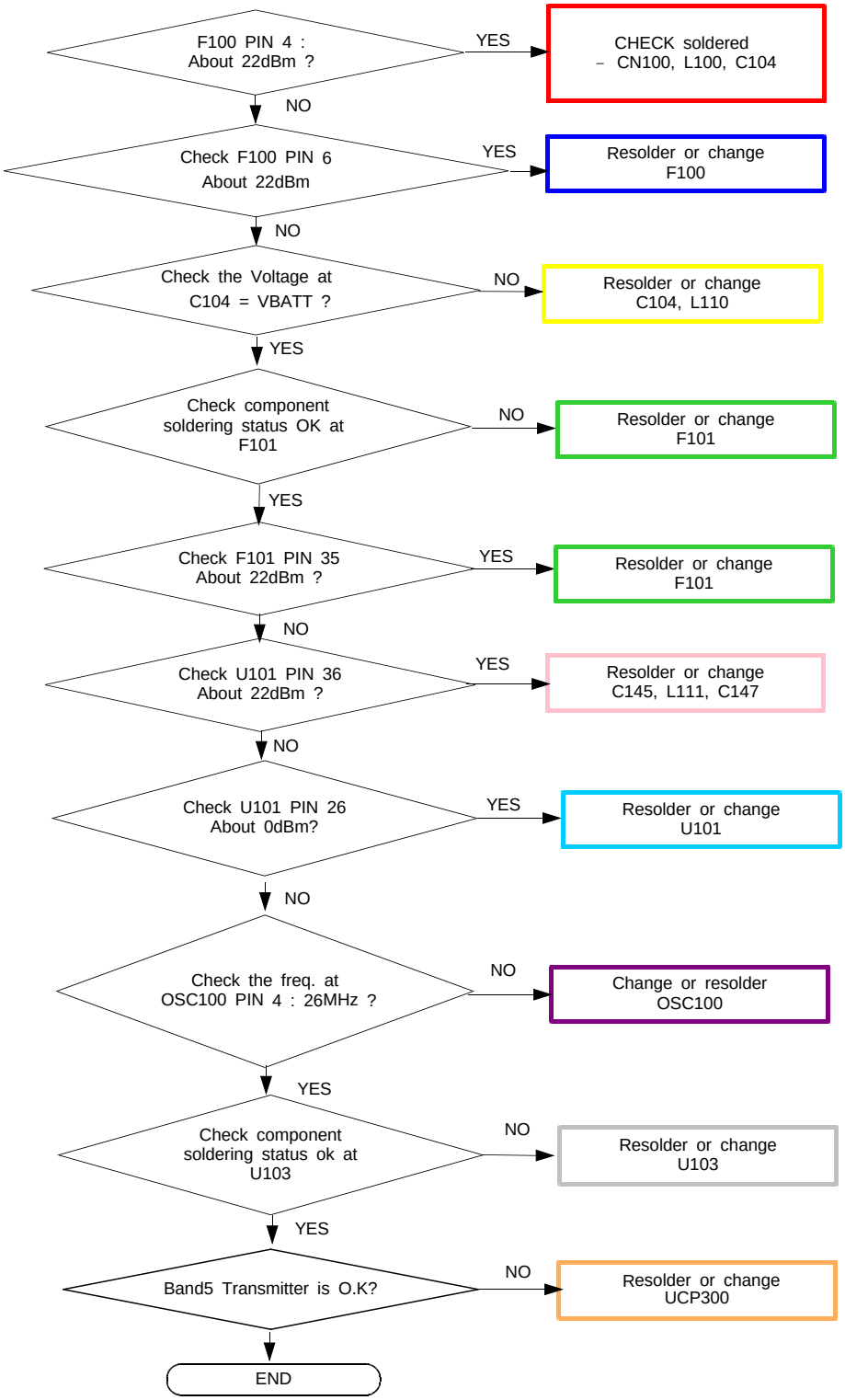
8-3-29. WCDMA BAND5 TX

CONTINUOUS TX ON CONDITION
TX POWER DAC: 23000 CODE APPLIED
WCDMA Band5 CH : 4408
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV. : 10dBm
ATT. : 20dB



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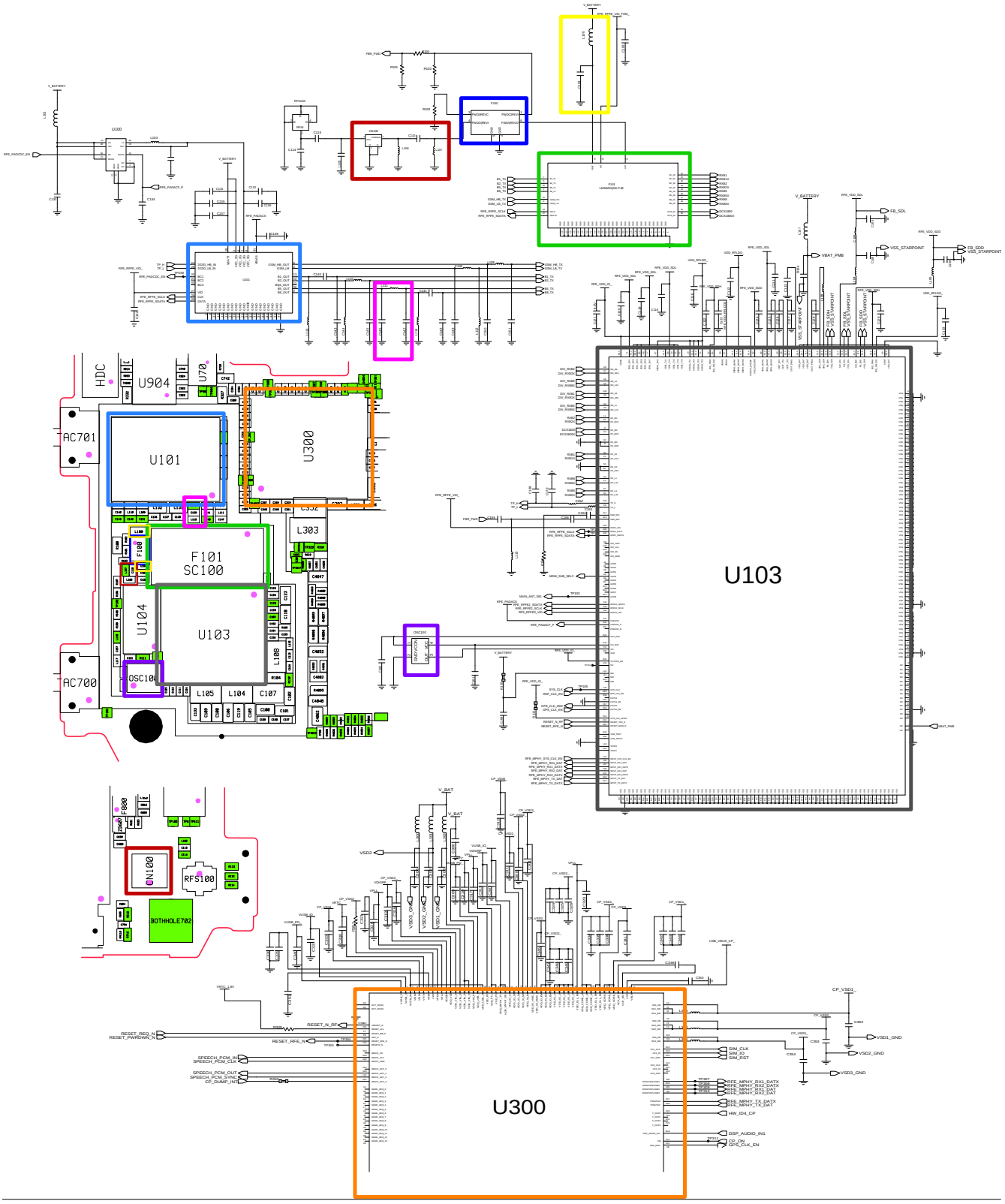

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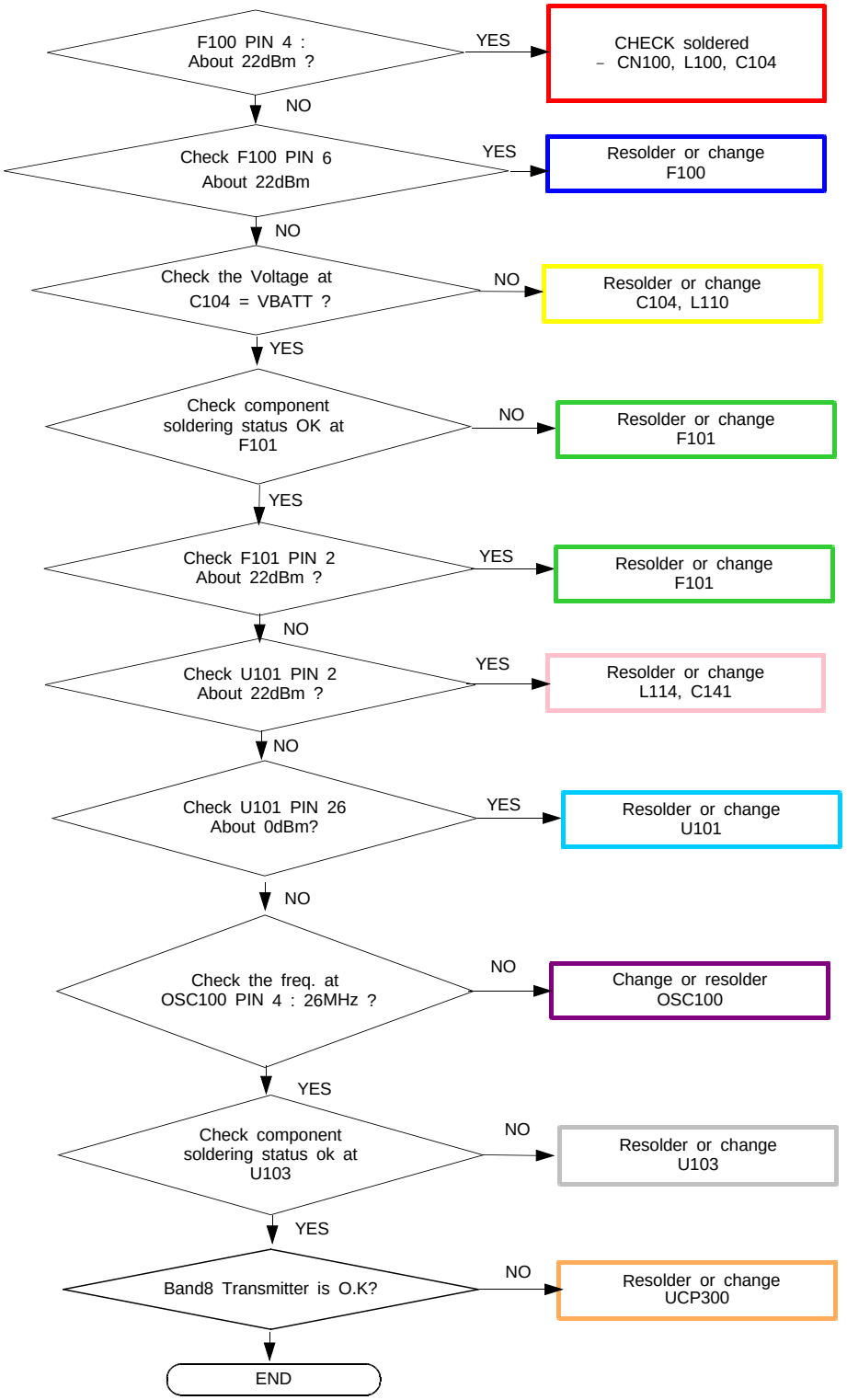
8-3-30. WCDMA BAND8 TX

CONTINUOUS TX ON CONDITION
TX POWER DAC: 23000 CODE APPLIED
WCDMA Band8 CH : 3013
RBW : 100KHz
VBW : 100KHz
SPAN : 10MHz
REF LEV. : 10dBm
ATT. : 20dB



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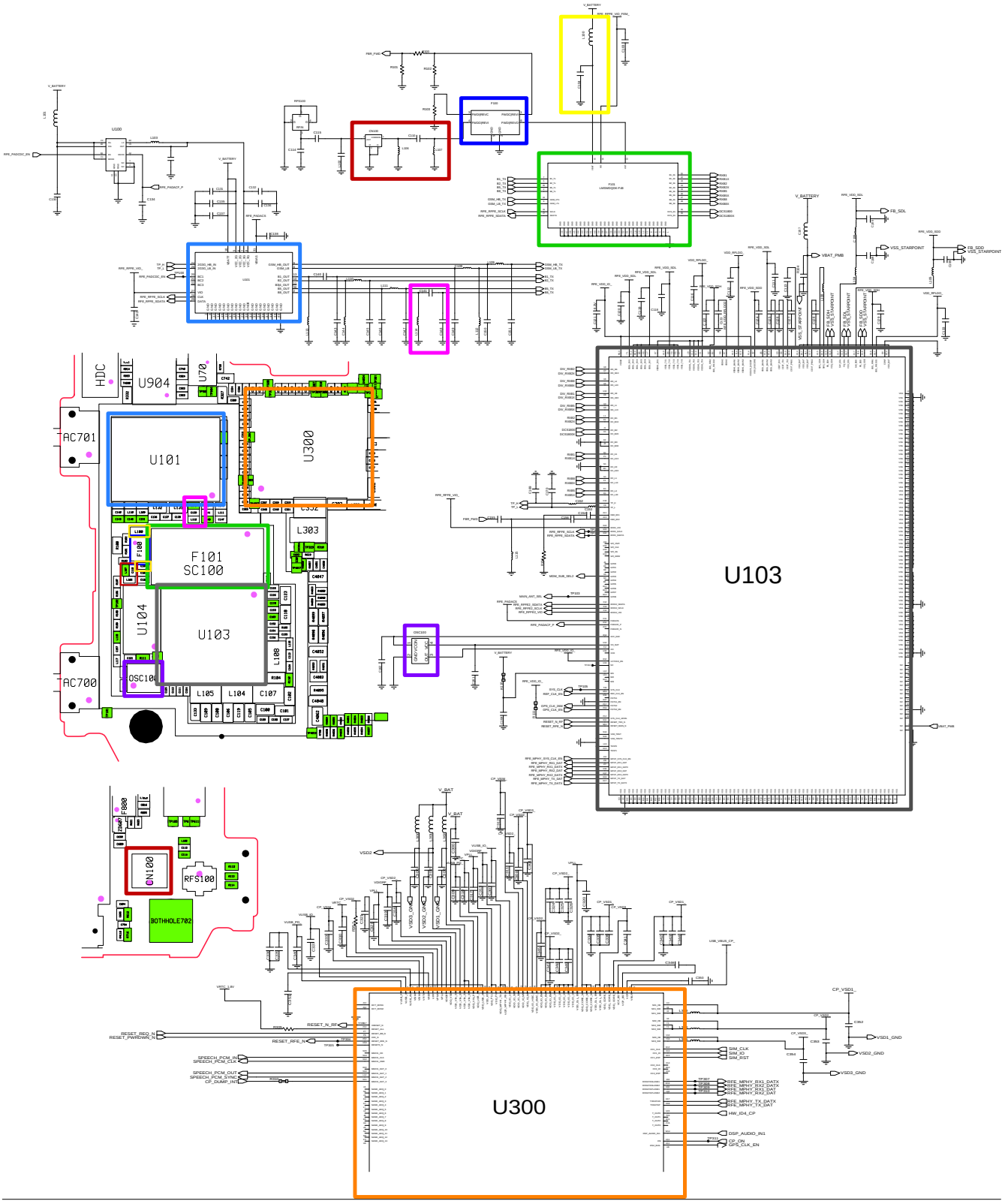

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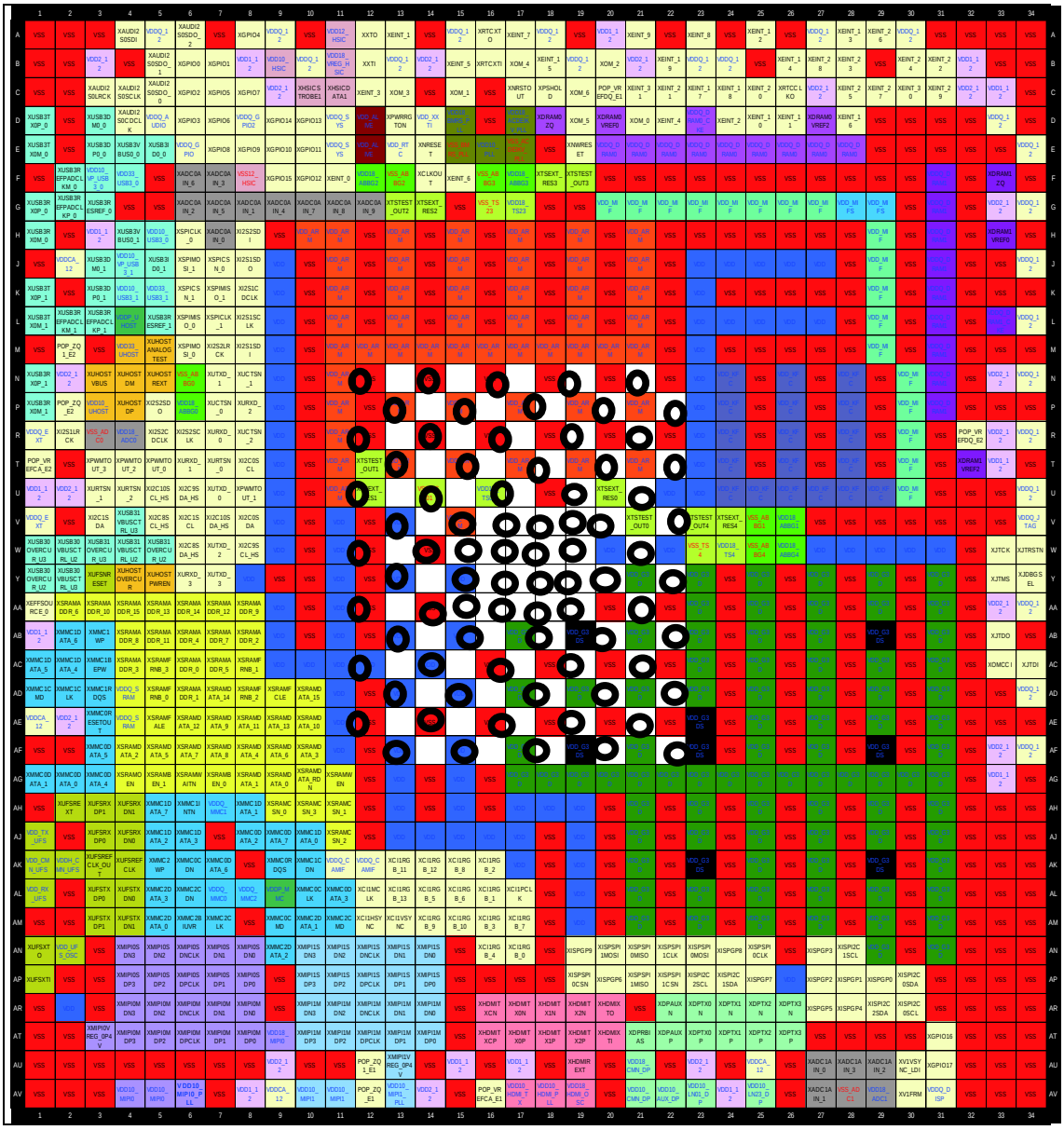
8-4. Service Schematics

- NC Point(Top View)

⭘ : NC

U4000-1(AP)



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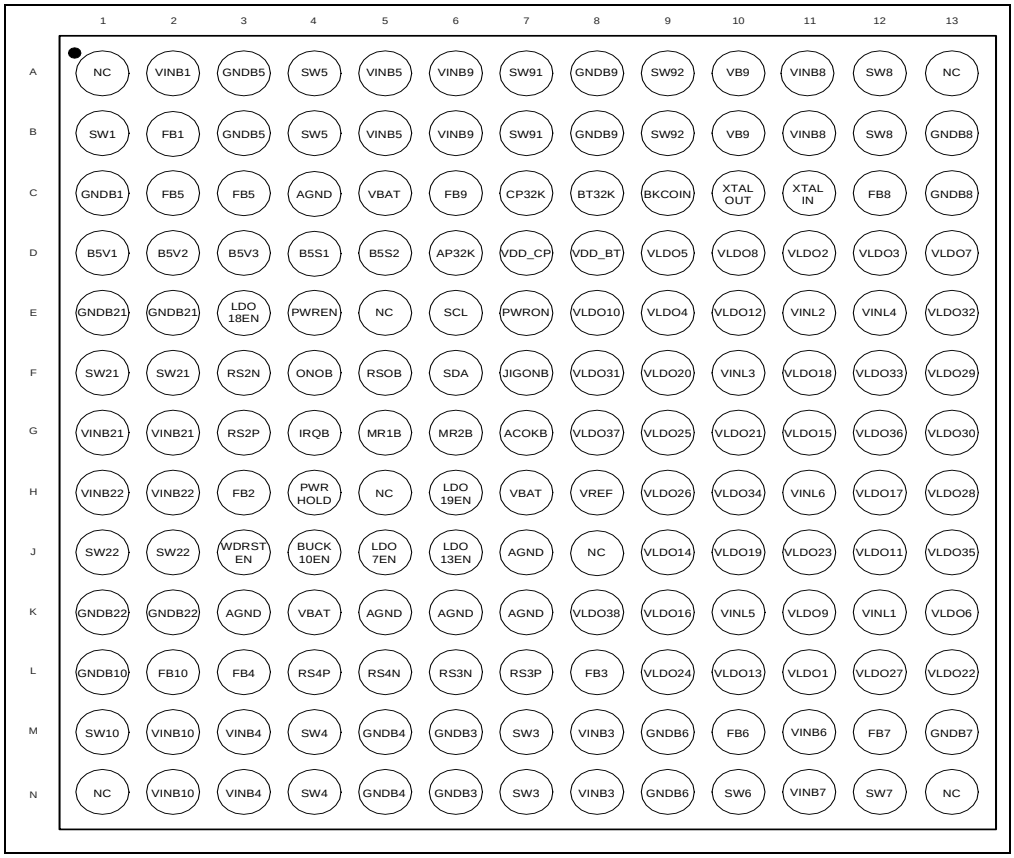
U600(PMIC)



	1	2	3	4	5	6	7	8	9	10	11	12	13
A	NC	VINB1	GNDB5	SW5	VINB5	VINB9	SW91	GNDB9	SW92	VB9	VINB8	SW8	NC
B	SW1	FB1	GNDB5	SW5	VINB5	VINB9	SW91	GNDB9	SW92	VB9	VINB8	SW8	GNDB8
C	GNDB1	FB5	FB5	AGND	VBAT	FB9	CP32K	BT32K	BKCOIN	XTAL OUT	XTAL IN	FB8	GNDB8
D	B5V1	B5V2	B5V3	B5S1	B5S2	AP32K	VDD_CP	VDD_BT	VLDO5	VLDO8	VLDO2	VLDO3	VLDO7
E	GNDB21	GNDB21	LDO 18EN	PWREN	NC	SCL	PWRON	VLDO10	VLDO4	VLDO12	VINL2	VINL4	VLDO32
F	SW21	SW21	RS2N	ONOB	RSOB	SDA	JIGONB	VLDO31	VLDO20	VINL3	VLDO18	VLDO33	VLDO29
G	VINB21	VINB21	RS2P	IRQB	MR1B	MR2B	ACOKB	VLDO37	VLDO25	VLDO21	VLDO15	VLDO36	VLDO30
H	VINB22	VINB22	FB2	PWR HOLD	NC	LDO 19EN	VBAT	VREF	VLDO26	VLDO34	VINL6	VLDO17	VLDO28
J	SW22	SW22	WDRST EN	BUCK 10EN	LDO 7EN	LDO 13EN	AGND	NC	VLDO14	VLDO19	VLDO23	VLDO11	VLDO35
K	GNDB22	GNDB22	AGND	VBAT	AGND	AGND	AGND	VLDO38	VLDO16	VINL5	VLDO9	VINL1	VLDO6
L	GNDB10	FB10	FB4	RS4P	RS4N	RS3N	RS3P	FB3	VLDO24	VLDO13	VLDO1	VLDO27	VLDO22
M	SW10	VINB10	VINB4	SW4	GNDB4	GNDB3	SW3	VINB3	GNDB6	FB6	VINB6	FB7	GNDB7
N	NC	VINB10	VINB4	SW4	GNDB4	GNDB3	SW3	VINB3	GNDB6	SW6	VINB7	SW7	NC

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